DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE-2022-BT-STD-0008]

RIN 1904-AF32

Energy Conservation Program: Energy Conservation Standards for Air Cooled, Three-Phase, Small Commercial Air Conditioners and Heat Pumps with a Cooling Capacity of Less than 65,000 Btu/h and Air-Cooled, Three-Phase, Variable Refrigerant Flow Air Conditioners and Heat Pumps with a Cooling Capacity of Less than 65,000 Btu/h.

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Notice of proposed rulemaking and request for comment.

SUMMARY: The Energy Policy and Conservation Act, as amended ("EPCA"), prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including small, large, and very large commercial package air conditioning and heating equipment, of which air cooled, three-phase, small commercial air conditioners and heat pumps with a cooling capacity of less than 65,000 Btu/h and air-cooled, three-phase, variable refrigerant flow air conditioners and heat pumps with a cooling capacity of less than 65,000 Btu/h are categories. EPCA requires the U.S. Department of Energy ("DOE" or "the Department") to consider the need for amended standards each time the relevant industry standard is amended with respect to the standard levels or design requirements applicable to that equipment, or periodically under a six-year-lookback review provision. For the three-phase equipment that is the

subject of this notice of proposed rulemaking ("NOPR"), DOE is proposing amended energy conservation standards that rely on new efficiency metrics and align with amended efficiency levels in the industry standard. DOE has preliminarily determined that it lacks clear and convincing evidence required by the statute to adopt standards more stringent than the levels specified in the industry standard. This NOPR also announces a webinar to receive comment on these proposed standards and associated analyses and results.

DATES: *Meeting*: DOE will hold a public meeting via webinar on Monday, May 16, 2022, from 1:00 p.m. to 4:00 p.m., in Washington, DC. See section VII, "Public Participation" for webinar registration information, participant instructions, and information about the capabilities available to webinar participants.

Comments: DOE will accept comments, data, and information regarding this NOPR no later than [**INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***].

Comments regarding the likely competitive impact of the proposed standard should be sent to the Department of Justice contact listed in the **ADDRESSES** section on or before [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***].

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *www.regulations.gov*. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2022-BT-STD-0008, by any of the following methods:

1. *Federal eRulemaking Portal*: *www.regulations.gov*. Follow the instructions for submitting comments.
2. *E-mail*: to *AirCooledACHP2022STD0008@ee.doe.gov*. Include docket number EERE-2022-BT-STD-0008 in the subject line of the message.

No telefacsimiles ("faxes") will be accepted. For detailed instructions on submitting comments and additional information on this process, see section VII of this document.

Although DOE has routinely accepted public comment submissions through a variety of mechanisms, including postal mail and hand delivery/courier, the Department has found it necessary to make temporary modifications to the comment submission process in light of the ongoing COVID-19 pandemic. DOE is currently suspending receipt of public comments via postal mail and hand delivery/courier. If a commenter finds that this change poses an undue hardship, please contact Appliance Standards Program staff at (202) 586-1445 to discuss the need for alternative arrangements. Once the COVID-19 pandemic health emergency is resolved, DOE anticipates resuming all of its regular options for public comment submission, including postal mail and hand delivery/courier.

Docket: The docket for this activity, which includes *Federal Register* notices, comments, and other supporting documents/materials, is available for review at *www.regulations.gov*. All documents in the docket are listed in the *www.regulations.gov* index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

The docket web page can be found at *www.regulations.gov/#!docketDetail;D=EERE-2022-BT-STD-0008*. The docket web page contains instructions on how to access all documents, including public comments, in the docket. See section VII for information on how to submit comments through *www.regulations.gov*.

Written comments regarding the burden-hour estimates or other aspects of the collection-of-information requirements contained in this proposed rule may be submitted to Office of Energy Efficiency and Renewable Energy following the instructions at *www.RegInfo.gov*.

EPCA requires the U.S. Attorney General to provide DOE a written determination of whether the proposed standard is likely to lessen competition. The U.S. Department of Justice Antitrust Division invites input from market participants and other interested persons with views on the likely competitive impact of the proposed standard. Interested persons may contact the Antitrust Division at *energy.standards@usdoj.gov* on or before the date specified in the **DATES** section. Please indicate in the "Subject" line of your email the title and Docket Number of this proposed rulemaking.

FOR FURTHER INFORMATION CONTACT:

Ms. Catherine Rivest, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-7335. Email: *ApplianceStandardsQuestions@ee.doe.gov*.

Ms. Kristin Koernig, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 586-3593. Email: *kristin.koernig@hq.doe.gov*.

For further information on how to submit a comment, review other public comments and the docket, or participate in the public meeting, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by email: *ApplianceStandardsQuestions@ee.doe.gov*.

SUPPLEMENTARY INFORMATION:

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I. Synopsis of the Proposed Rule

Title III, Part C[1] of EPCA[2] established the Energy Conservation Program for Certain Industrial Equipment. (42 U.S.C. 6311-6317) Such equipment includes air cooled, three-phase, small commercial air conditioners and heat pumps ("ACUACs and ACUHPS") with a cooling capacity of less than 65,000 Btu/h ("three-phase, less than 65,000 Btu/h ACUACs and ACUHPs") and air-cooled, three-phase, variable refrigerant flow ("VRF") air conditioners and heat pumps with a cooling capacity of less than 65,000 Btu/h ("three-phase, less than 65,000 Btu/h VRF"), the subject of this proposed rulemaking.

Pursuant to EPCA, DOE is required to consider amending the energy efficiency standards for certain types of covered commercial and industrial equipment, including the equipment at issue in this document, whenever the American Society of Heating, Refrigerating, and Air-Conditioning Engineers ("ASHRAE") amends the standard levels or design requirements prescribed in ASHRAE 90.1, "Energy Standard for Buildings Except Low-Rise Residential Buildings," ("ASHRAE 90.1"), and at a minimum, every 6 years (42 U.S.C. 6313(a)(6)(A)-(C)). For each type of equipment, EPCA directs that if ASHRAE 90.1 is amended, DOE must adopt amended energy conservation standards at the new efficiency level in ASHRAE 90.1, unless clear and convincing evidence supports a determination that adoption of a more-stringent efficiency level would produce significant additional energy savings and be technologically feasible and economically justified (42 U.S.C. 6313(a)(6)(A)(ii) (referred to as the "ASHRAE trigger")). If DOE adopts an amended uniform national standard at the efficiency level specified in the amended ASHRAE 90.1, DOE must establish such standard no later than 18 months after publication of the amended industry standard. (42 U.S.C. 6313(a)(6)(A)(ii)(I)) If DOE

determines that a more-stringent standard is appropriate under the statutory criteria, DOE must establish such a more-stringent standard no later than 30 months after publication of the revised ASHRAE 90.1. (42 U.S.C. 6313(a)(6)(B)(i))

Under EPCA, DOE must also review its energy conservation standards for three-phase, less than 65,000 Btu/h ACUAC, ACUHP, and VRF equipment every six years and either: (1) issue a notice of determination that the standards do not need to be amended, as adoption of a more-stringent level under the relevant statutory criteria is not supported by clear and convincing evidence; or (2) issue a notice of proposed rulemaking including new proposed standards based on certain criteria and procedures in subparagraph (B).[1] (42 U.S.C. 6313(a)(6)(C)(i))

ASHRAE officially released the 2019 version of Standard 90.1 ("ASHRAE 90.1-2019") on October 25, 2019, thereby triggering DOE's previously referenced obligations, pursuant to EPCA, to determine for certain classes of three-phase, less than 65,000 Btu/h ACUAC, ACUHP, and VRF systems whether: (1) the amended industry standard should be adopted; or (2) clear and convincing evidence exists to justify more-stringent standard levels. For any classes where DOE was not triggered by ASHRAE 90.1-2019, the Department routinely considers those classes under EPCA's six-year-lookback provision at the same time to address the subject equipment in a comprehensive fashion.

[1] In relevant part, subparagraph (B) specifies that: (1) in making a determination of economic justification, DOE must consider, to the maximum extent practicable, the benefits and burdens of an amended standard based on the seven criteria described in EPCA; (2) DOE may not prescribe any standard that increases the energy use or decreases the energy efficiency of a covered equipment; and (3) DOE may not prescribe an amended standard that interested persons have established by a preponderance of evidence is likely to result in the unavailability in the United States of any product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes) that are substantially the same as those generally available in the United States. (42 U.S.C. 6313(a)(6)(B)(ii)-(iii))

The current Federal energy conservation standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF are codified in DOE's regulations at 10 CFR 431.97. These standards for both equipment types are specified in terms of seasonal energy efficiency ratio ("SEER") for cooling mode and heating seasonal performance factor ("HSPF") for heating mode. The current Federal test procedure at 10 CFR 431.96 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs references American National Standards Institute ("ANSI")/Air-Conditioning, Heating, and Refrigeration Institute ("AHRI") Standard 210/240-2008, "*Performance Rating of Unitary Air-Conditioning & Air-Source Heat Pump Equipment*," approved by ANSI on October 27, 2011, and updated by Addendum 1 in June 2011 and Addendum 2 in March 2012 ("AHRI 210/240-2008"). The current Federal test procedure at 10 CFR 431.96 for three-phase, less than 65,000 Btu/h VRF references ANSI/AHRI 1230-2010, "*2010 Standard for Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment*," approved August 2, 2010 and updated by Addendum 1 in March 2011 ("ANSI/AHRI 1230-2010").

As set forth in ASHRAE 90.1-2019, the efficiency levels for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs are specified in terms of seasonal energy efficiency ratio-2 ("SEER2") for cooling mode and heating seasonal performance factor-2 ("HSPF2") for heating mode. These efficiency levels are measured per ANSI/AHRI 210/240, "*2023 Standard for Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment*" ("AHRI 210/240-2023"). Furthermore, ASHRAE 90.1-2019 and AHRI 210/240-2023 align the test procedures for three-phase, less than 65,000 Btu/h equipment with those of their single-phase counterparts (i.e., measuring

performance in terms of SEER2 and HSPF2), which, aside from the three-phase power supply, are otherwise identical.[2]

DOE is also proposing definitions for space-constrained ("S-C") commercial package air conditioning and heating equipment ("S-C ACUACs and ACUHPs") and for small-duct, high-velocity ("SDHV") commercial package air conditioning and heating equipment ("SDHV ACUACs and ACUHPs") as described in section V.C. Additionally, DOE is proposing to separate equipment classes and corresponding energy conservation standards for three-phase, less than 65,000 Btu/h ACUAC and ACUHP that are (1) S-C split-system ACUACs; (2) S-C split-system ACUHPs; (3) S-C single-package ACUACs; (4) S-C single-package ACUHPs; (5) SDHV ACUACs; and (6) SDHV ACUHPs. These additional equipment classes are included in ASHRAE 90.1-2019 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs.

As described in detail in section III of this document, DOE conducted a crosswalk analysis to translate the current SEER and HSPF standards (measured per the current DOE test procedure) to SEER2 and HSPF2 levels, respectively (measured per the latest version of AHRI Standard AHRI 210/240 (*i.e.*, AHRI 210/240-2023)). DOE then compared these crosswalked metrics to those presented in ASHRAE 90.1-2019 to determine which equipment classes are triggered by the increased stringency in ASHRAE 90.1-2019.

In this document, DOE proposes to update the minimum energy conservation standard levels found at Tables 3, 4, and 13 of 10 CFR 431.97. The proposed standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less

[2] *See, e.g.,* 80 FR 42614, 42622 (July 17, 2015), 83 FR 49501, 49504 (Oct. 2, 2018), and 86 FR 70316, 70322 (Dec. 9, 2021).

than 65,000 Btu/h VRF systems, which are expressed in SEER2 and HSPF2, are presented in Table I-1 and Table I-2.[3] If adopted, the standards in Table I-1 are proposed for all three-phase, less than 65,000 Btu/h ACUACs and ACUHPs manufactured in or imported into the United States starting January 1, 2025. If adopted, the standards in Table I-2 would apply to all three-phase, less than 65,000 Btu/h VRF manufactured in or imported into the United States starting January 1, 2025.

As described in section V of this document, DOE has tentatively determined that insufficient data are available to determine, based on clear and convincing evidence, that more-stringent standards would result in significant additional energy savings and be technologically feasible and economically justified. The clear and convincing threshold is a heightened standard, and would only be met where the Secretary has an abiding conviction, based on available facts, data, and DOE's own analyses, that it is highly probable an amended standard would result in a significant additional amount of energy savings, and is technologically feasible and economically justified. *See American Public Gas Association v. U.S. Dep't of Energy*, No. 20-1068, 2022 WL 151923, at *4 (D.C. Cir. January 18, 2022) (citing *Colorado v. New Mexico*, 467 U.S. 310, 316, 104 S.Ct. 2433, 81 L.Ed.2d 247 (1984)).

DOE normally performs multiple in-depth analyses to determine whether there is clear and convincing evidence to support more stringent energy conservation standards (*i.e.,* whether more stringent standards would produce significant additional conservation of energy and be technologically feasible and economically justified). However, as discussed in the section V of this NOPR, due to the lack of available market and

[3] Energy conservations standards for air-cooled, three-phase, small, commercial packaged air conditioners and heat pumps with a cooling capacity of greater than 65,000 Btu/h and air-cooled, VRF, multi-split systems with a cooling capacity of greater than 65,000 Btu/h are not addressed in this NOPR. Instead this equipment will be addressed in separate energy conservation standards rulemakings.

performance data, DOE is unable to conduct the analysis necessary to evaluate the potential energy savings or evaluate whether more stringent standards would be technologically feasible or economically justifiable, with sufficient certainty. As such, DOE is not proposing standards at levels more stringent than those specified in ASHRAE Standard 90.1. Rather, DOE is proposing to adopt the levels specified in ASHRAE 90.1-2019 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs, as required by EPCA, except for S-C ACUACs and ACUHPs, SDHV ACUACs and ACUHPs, and three-phase less than 65,000 Btu/h VRF equipment, for which DOE is proposing crosswalked levels that maintain equivalent stringency to the currently applicable Federal standards but do not align with the levels in ASHRAE 90.1-2019.

For S-C ACUACs and ACUHPs and SDHV ACUACs and ACUHPs, DOE has tentatively concluded that the levels specified in ASHRAE 90.1-2019 are less stringent than the applicable current Federal standards. Therefore, to avoid backsliding (as required by EPCA)[4], DOE is proposing standards for S-C ACUACs and ACUHPs and SDHV ACUACs and ACUHPs in terms of SEER2 and HSPF2 that maintain equivalent stringency to the applicable current Federal standards (in terms of SEER and HSPF).

For three-phase, less than 65,000 Btu/h VRF equipment, ASHRAE 90.1-2019 did not update the efficiency metrics to be in terms of SEER2 and HSPF2 and instead left the metrics in terms of SEER and HSPF with no change to efficiency levels. In this document, DOE is proposing translated standard levels in terms of SEER2 and HSPF2 that are of equivalent stringency to the current SEER and HSPF Federal standards.

[4] EPCA's anti-backsliding provision prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6313(a)(6)(B)(iii)(I))

Table I-1: Proposed Energy Conservation Standards for Air-Cooled, Three-Phase, Small Commercial Package Air Conditioners and Heat Pumps with a Cooling Capacity of Less Than 65,000 Btu/h

Equipment Type	Size Category (Cooling)	Subcategory	Minimum Efficiency
Air Conditioners	< 65,000 Btu/h	Split System	13.4 SEER2
		Single-Package	13.4 SEER2
Heat Pumps	< 65,000 Btu/h	Split System	14.3 SEER2 7.5 HSPF2
		Single-Package	13.4 SEER2 6.7 HSPF2
Space-Constrained Air Conditioners	≤ 30,000 Btu/h	Split System	13.9 SEER2
		Single-Package	13.9 SEER2
Space-Constrained Heat Pumps	≤ 30,000 Btu/h	Split System	13.9 SEER2 7.0 HSPF2
		Single-Package	13.9 SEER2 6.7 HSPF2
Small-Duct, High-Velocity Air Conditioners	< 65,000 Btu/h	Split System	13.0 SEER2
Small-Duct, High-Velocity Heat Pumps	< 65,000 Btu/h	Split System	14.0 SEER2 6.9 HSPF2

Table I-2: Proposed Energy Conservation Standards for Air-Cooled, Three-Phase, VRF Multi-Split Air Conditioners and Heat Pumps with a Cooling Capacity of Less Than 65,000 Btu/h

Equipment Type	Size Category (Cooling)	Subcategory	Minimum Efficiency
VRF Air Conditioners	< 65,000 Btu/h	Split System	12.9 SEER2
VRF Heat Pumps	< 65,000 Btu/h	Split System	12.9 SEER2 6.5 HSPF2

II. Introduction

The following section briefly discusses the statutory authority underlying this proposed rule, as well as some of the relevant historical background related to the establishment of standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF.

A. Authority

EPCA authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part C of EPCA, added by Pub. L. 95-619, Title IV, section 441(a) (42 U.S.C. 6311-6317, as codified), established the Energy Conservation Program for Certain Industrial Equipment, which sets forth a variety of provisions designed to improve energy efficiency for covered equipment. This covered equipment includes small, large, and very large commercial package air conditioning and heating equipment, including three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF, the subject of this document. (42 U.S.C. 6311(1)(B)-(D)) Additionally, DOE must consider amending the energy efficiency standards for certain types of commercial and industrial equipment, including the equipment at issue in this document, whenever ASHRAE amends the standard levels or design requirements prescribed in ASHRAE/IES Standard 90.1, and, at a minimum, every 6 years. (42 U.S.C. 6313(a)(6)(A)-(C))

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) the establishment of Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA include definitions (42 U.S.C. 6311), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), energy conservation standards (42 U.S.C. 6313), and the authority to require information and reports from manufacturers (42 U.S.C. 6316; 42 U.S.C. 6296).

Federal energy efficiency requirements for covered equipment established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (*See* 42 U.S.C. 6316(a) - (b); 42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or

regulations, in accordance with the procedures and other provisions set forth under EPCA. (*See* 42 U.S.C. 6316(b)(2)(D))

Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of each covered product. (42 U.S.C. 6314) Manufacturers of covered equipment must use the Federal test procedures as the basis for: (1) certifying to DOE that their equipment complies with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6316(b); 42 U.S.C. 6296), and (2) making representations about the efficiency of that equipment (42 U.S.C. 6314(d)). Similarly, DOE uses these test procedures to determine whether the equipment complies with relevant standards promulgated under EPCA. The DOE test procedures for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less than 65,000 Btu/h VRF appear at 10 CFR 431, subpart F, appendix A.

ASHRAE 90.1 sets industry energy efficiency levels for small, large, and very large commercial package air-conditioning and heating equipment, packaged terminal air conditioners, packaged terminal heat pumps, warm air furnaces, packaged boilers, storage water heaters, instantaneous water heaters, and unfired hot water storage tanks (collectively "ASHRAE equipment"). For each type of listed ASHRAE equipment, EPCA directs that if ASHRAE amends Standard 90.1, DOE must adopt amended standards at the new ASHRAE efficiency level, unless DOE determines, supported by clear and convincing evidence, that adoption of a more stringent level would produce significant additional conservation of energy and would be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii))

Under EPCA, DOE must also review energy efficiency standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF every six years and either: (1) issue a notice of determination that the standards do not need to be amended as adoption of a more stringent level is not supported by clear and convincing evidence; or (2) issue a notice of proposed rulemaking including new proposed standards based on certain criteria and procedures in subparagraph (B). (42 U.S.C. 6313(a)(6)(C))

In deciding whether a more-stringent standard is economically justified, under either the provisions of 42 U.S.C. 6313(a)(6)(A) or 42 U.S.C. 6313(a)(6)(C), DOE must determine whether the benefits of the standard exceed its burdens. DOE must make this determination after receiving comments on the proposed standard and by considering, to the maximum extent practicable, the following seven factors:

1) The economic impact of the standard on manufacturers and consumers of products subject to the standard;

2) The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered equipment that are likely to result from the standard;

3) The total projected amount of energy savings likely to result directly from the standard;

4) Any lessening of the utility or the performance of the covered product likely to result from the standard;

5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the standard;

6) The need for national energy conservation; and

7) Other factors the Secretary of Energy considers relevant.

(42 U.S.C. 6313(a)(6)(B)(ii)(I)–(VII))

As discussed previously, EPCA also contains what is known as an "anti-backsliding" provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6313(a)(6)(B)(iii)(I)) Also, the Secretary may not prescribe an amended or new standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any covered product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes) that are substantially the same as those generally available in the United States. (42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa))

B. Background

1. Current Standards

EPCA defines "commercial package air conditioning and heating equipment" as air-cooled, water-cooled, evaporatively-cooled, or water-source (not including ground water source) electrically operated, unitary central air conditioners and central air conditioning heat pumps for commercial application. (42 U.S.C. 6311(8)(A); 10 CFR 431.92) EPCA further classifies "commercial package air conditioning and heating

equipment" into categories based on cooling capacity (*i.e.*, small, large, and very large categories). (42 U.S.C. 6311(8)(B)-(D); 10 CFR 431.92) "Small commercial package air conditioning and heating equipment" means equipment rated below 135,000 Btu per hour (cooling capacity). (42 U.S.C. 6311(8)(B); 10 CFR 431.92) "Large commercial package air conditioning and heating equipment" means equipment rated: (i) at or above 135,000 Btu per hour; and (ii) below 240,000 Btu per hour (cooling capacity). (42 U.S.C. 6311(8)(C); 10 CFR 431.92) "Very large commercial package air conditioning and heating equipment" means equipment rated: (i) at or above 240,000 Btu per hour; and (ii) below 760,000 Btu per hour (cooling capacity). (42 U.S.C. 6311(8)(D); 10 CFR 431.92)

The energy conservation standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs were most recently amended through a final rule for energy conservation standards and test procedures for certain commercial HVAC and water heating equipment published in the *Federal Register* on July 17, 2015 (July 2015 final rule). 80 FR 42614. For three of the four equipment classes of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs (packaged air conditioners, packaged heat pumps, and split-system heat pumps), the July 2015 final rule adopted energy conservation standards that correspond to the levels in the 2013 revision of ASHRAE Standard 90.1. For the remaining equipment class (split-system air conditioners), the July 2015 final rule did not amend the energy conservation standards.

DOE's current energy conservation standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs are codified at Tables 1 and 2 of 10 CFR 431.97. The current equipment classes are differentiated by configuration (split system or single package) and by heating capability (air conditioner or heat pump) and repeated in Table II-1 of this document.

Pursuant to its authority under EPCA (42 U.S.C. 6313(a)(6)(A)) and in response to updates to ASHRAE Standard 90.1, DOE has established the category of VRF multi-split systems, which meets the EPCA definition of "commercial package air conditioning and heating equipment," but which EPCA did not expressly identify. *See* 10 CFR 431.92; 10 CFR 431.97.

DOE defines "variable refrigerant flow air conditioner" as a unit of commercial package air-conditioning and heating equipment that is configured as a split system air conditioner incorporating a single refrigerant circuit, with one or more outdoor units, at least one variable-speed compressor or an alternate compressor combination for varying the capacity of the system by three or more steps, and multiple indoor fan coil units, each of which is individually metered and individually controlled by an integral control device and common communications network and which can operate independently in response to multiple indoor thermostats. Variable refrigerant flow implies three or more steps of capacity control on common, inter-connecting piping. 10 CFR 431.92.

DOE defines "variable refrigerant flow multi-split heat pump" as a unit of commercial package air-conditioning and heating equipment that is configured as a split system heat pump that uses reverse cycle refrigeration as its primary heating source and which may include secondary supplemental heating by means of electrical resistance, steam, hot water, or gas. The equipment incorporates a single refrigerant circuit, with one or more outdoor units, at least one variable-speed compressor or an alternate compressor combination for varying the capacity of the system by three or more steps, and multiple indoor fan coil units, each of which is individually metered and individually controlled by a control device and common communications network and which can operate independently in response to multiple indoor thermostats. Variable refrigerant

flow implies three or more steps of capacity control on common, inter-connecting piping. 10 CFR 431.92.

DOE adopted energy conservation standards for VRF multi-split systems in a final rule published on May 16, 2012 (May 2012 Final Rule). 77 FR 28928. When determining the appropriate standard levels, DOE considered updates to the 2010 edition of ASHRAE Standard 90.1 ("ASHRAE 90.1-2010"), which designated separate equipment classes for VRF multi-split systems for the first time. *Id.* at 77 FR 28934. For three-phase, less than 65,000 Btu/h VRF, DOE maintained the standards from the equipment class under which the corresponding VRF multi-split system equipment class was previously regulated (*i.e.,* three-phase, less than 65,000 Btu/h VRF had previously been covered as three-phase, less than 65,000 Btu/h ACUACs and ACUHPs). *Id.* at 77 FR 28938.

DOE's current equipment classes for three-phase, less than 65,000 Btu/h VRF are differentiated only by refrigeration cycle (air conditioners or heat pumps). DOE's current standards for VRF multi-split systems are set forth at Table 13 to 10 CFR 431.97 and repeated in Table II-2 of this document.

Table II-1 Current Federal Energy Conservation Standards for Air-Cooled, Three-Phase, Small Commercial Package Air Conditioners and Heating Equipment with a Cooling Capacity of Less Than 65,000 Btu/h

Equipment Type	Cooling Capacity	Subcategory	Heating Type	Efficiency Level	Compliance Date:
Small Commercial Package Air Conditioner and Heating Equipment (Air-Cooled, 3-Phase,	< 65,000 Btu/h	AC	All	13 SEER	June 16, 2008
		HP	All	14 SEER 8.2 HSPF	January 1, 2017

Split-System)					
Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package)	< 65,000 Btu/h	AC	All	14 SEER	January 1, 2017
		HP	All	14 SEER 8.0 HSPF	January 1, 2017

Table II-2 - Current Federal Energy Conservation Standards for Air-Cooled, Three-Phase, Variable Refrigerant Flow Air Conditioners and Heat Pumps with a Cooling Capacity of Less Than 65,000 Btu/h

Equipment Type	Cooling Capacity	Heating Type	Efficiency Level	Compliance Date:
VRF Multi-Split Air Conditioners (Air-Cooled)	< 65,000 Btu/h	All	13 SEER	June 16, 2008
VRF Multi-Split Heat Pumps (Air-Cooled)	< 65,000 Btu/h	All	13 SEER 7.7 HSPF	June 16, 2008

2. ASHRAE 90.1-2019

As previously discussed, ASHRAE released ASHRAE 90.1-2019 on October 25, 2019, which updated the test procedure references for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less than 65,000 Btu/h VRF. ASHRAE 90.1-2019 also updated the efficiency metrics for less than 65,000 Btu/h ACUACs and ACUHPs from SEER and HSPF to SEER2 and HSPF2 and updated the efficiency levels for all classes to reflect the new metrics. ASHRAE 90.1-2019 did not update the efficiency metrics or efficiency levels for three-phase, less than 65,000 Btu/h VRF.

For three-phase, less than 65,000 Btu/h ACUACs and ACUHPs, the current DOE test procedure references the industry test procedure ANSI/AHRI Standard 210/240-2008

with Addenda 1 and 2, *Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment* ("AHRI 210/240-2008") and measures performance in terms of SEER and HSPF. ASHRAE 90.1-2019 references the updated industry test procedure ANSI/AHRI Standard 210/240-2023, *2023 Performance Rating of Unitary Air-conditioning & Air-source Heat Pump Equipment*, ("AHRI 210/240-2023") beginning on January 1, 2023, which measures performance in terms of SEER2 and HSPF2. As discussed in section III.A.2 of this document, DOE conducted a preliminary crosswalk analysis to determine whether the new metrics and efficiency levels in ASHRAE 90.1-2019 represent at least equivalent stringency as compared to the existing DOE standards in terms of SEER and HSPF. As discussed in section I.A.1 of this document, DOE's preliminary crosswalk analysis determined that ASHRAE 90.1-2019 increased the stringency of cooling and heating mode efficiency levels for the two DOE equipment classes of three-phase, split-system, less than 65,000 Btu/h ACUAC and ACUHP equipment while leaving unchanged the stringency of single-packaged, three-phase equipment.

Regarding three-phase, less than 65,000 Btu/h VRF, ASHRAE 90.1-2019 also updates the relevant industry test procedure. The current DOE test procedure references AHRI Standard 1230-2010 with Addendum 1, *Performance Rating of Variable Refrigerant Flow (VRF) Multi-split Air-conditioning and Heat Pump Equipment* ("AHRI 1230-2010"). ASHRAE 90.1-2019 updates this reference to the more recent version of this standard: AHRI Standard 1230-2014 with Addendum 1. As discussed in a separate rulemaking for commercial VRF multi-split systems with rated cooling capacity of greater than 65,000 Btu/h, DOE determined that the test procedure changes between AHRI 1230-2010 and AHRI 1230-2014 do not have a significant impact on the measured heating or cooling efficiency of VRF multi-split systems, therefore a crosswalk analysis

was not required. 86 FR 70644, 70650 (Dec. 10, 2021). ASHRAE 90.1-2019 did not update the efficiency metrics or standards levels for three-phase, less than 65,000 Btu/h VRF – which are still specified in terms of SEER and HSPF.

3. September 2020 NODA/RFI

DOE published a notice of data availability and request for information ("NODA/RFI") in response to the amendments to ASHRAE 90.1-2019 in the *Federal Register* on September 25, 2020 ("September 2020 NODA/RFI"). 85 FR 60642. In the September 2020 NODA/RFI, DOE compared the current Federal standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs (in terms of SEER and HSPF) to the levels in ASHRAE 90.1-2019 (in terms of SEER2 and HSPF2) and requested comment on its preliminary findings. *Id.* at 85 FR 60662-60666. The September 2020 NODA/RFI did not address standards for three-phase, less than 65,000 Btu/h VRF. DOE received comments in response to the September 2020 NODA/RFI from interested parties listed in Table II-2.

Table II.2 List of Commenters with Written Submissions to the September 2020 NODA/RFI

Commenter(s)	**Abbreviation**	**Commenter Type**
Air-Conditioning, Heating and Refrigeration Institute	AHRI	Manufacturer Trade Group
Carrier Corporation	Carrier	Manufacturer
Goodman Manufacturing Company, L.P.	Goodman	Manufacturer
Rheem Manufacturing Company	Rheem	Manufacturer
California Investor-Owned Utilities	CA IOUs	Utility
Northwest Energy Alliance, Appliance Standards Awareness Project, Natural Resources Defense Council	Joint Advocates	Advocacy Group
Trane Technologies	Trane	Manufacturer

III. Discussion of Crosswalk Analysis

A. Crosswalk Background

The energy conservation standards proposed in this document were developed in response to updates to the relevant industry test standard (*i.e.*, AHRI 210/240-2023), as well as updates to the minimum efficiency levels specified in ASHRAE 90.1-2019. As stated in section II.A, DOE must consider amending the energy efficiency standards for certain types of commercial and industrial equipment, including the equipment at issue in this document, whenever ASHRAE amends the standard levels or design requirements prescribed in ASHRAE Standard 90.1, and at a minimum, every 6 years. (42 U.S.C. 6313(a)(6)(A)-(C)) EPCA also prohibits DOE from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6313(a)(6)(B)(iii)(I)); commonly referred to as EPCA's "anti-backsliding provision") DOE conducted separate crosswalk analyses for each equipment class to ensure that EPCA's anti-backsliding provision would not be violated if DOE were to adopt the standards proposed in this NOPR.

As described in the following sections, DOE presented a preliminary crosswalk in the September 2020 NODA/RFI for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs that qualitatively evaluated whether the levels presented in ASHRAE 90.1-2019 were of higher, lower, or equivalent stringency to the existing Federal standard levels. 85 FR 60642, 60662-60663 (Sept. 25, 2020). The September 2020 NODA/RFI did not consider standards for three-phase, less than 65,000 Btu/h VRF and therefore did not conduct a crosswalk translation for such equipment. In the September 2020 NODA/RFI, DOE accounted for the changes in the updated industry test standard AHRI

210/240-2023. *Id.* at 85 FR 60663. Specifically, DOE evaluated the impact to measured efficiency resulting from increased external static pressure requirements and changes to the heating load line in AHRI 210/240-2023. *Id.* at 85 FR 60662. In AHRI 210/240-2023, most equipment classes have increased external static pressure testing requirements for ducted systems as compared to the current Federal test procedures. As a result, most classes of three-phase, less than 65,000 Btu/h equipment consume more power under the updated test procedure and thus have lower numerical values of SEER2 and HSPF2 when translated from a given SEER or HSPF rating, respectively. *Id.* AHRI 210/240-2023 also includes changes to the heating load line calculations. Specifically, AHRI 210/240-2023 includes different slope factors for the heating load line, which results in higher calculated heating demand for most systems. The increased heating demand has an overall impact of decreased numerical values for HSPF2 as compared to HSPF. *Id.*

On January 6, 2017, DOE published a direct final rule concerning energy conservation standards for residential central air conditioners and heat pumps ("CACs and HPs") ("January 2017 CAC/HP ECS DFR"). 82 FR 1786. The January 2017 CAC/HP ECS DFR established crosswalk translations for CACs and HPs from SEER and HSPF (measured per 10 CFR part 430, subpart B, appendix M ("Appendix M")) to SEER2 and HSPF2 (measured per 10 CFR part 430, subpart B, appendix M1 ("Appendix M1")). Specifically, in the January 2017 CAC/HP ECS DFR DOE established multiple SEER-to-SEER2 translations that were unique to the test conditions for each product class. *Id.* at 82 FR 1849. In the January 2017 CAC/HP ECS DFR, DOE also established an HSPF-to-HSPF2 translation and concluded that the 15 percent reduction from HSPF to HSPF2 that was observed in an earlier rule for split-system and single-package heat pumps was appropriate also for S-C and SDHV heat pumps. *Id.* at 82 FR 1850.

As described in the September 2020 NODA/RFI, AHRI 210/240-2023 aligns test methods and ratings to be consistent with DOE's test procedure for single-phase central air conditioners at appendix M1. 85 FR 60642, 60647 (Sept. 25, 2020). Given that three-phase equipment are generally identical to their single-phase counterparts, aside for three-phase power input, DOE presented a preliminary metric translation for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs based on the metric translation used for single-phase CAC/HPs presented in the January 2017 CAC/HP ECS DFR in the September 2020 NODA/RFI. *Id.* at 85 FR 60662. For three-phase equipment classes with Federal standards matching SEER and HPSF standards in Table V-29 of the January 2017 CAC/HP ECS DFR, DOE used the corresponding SEER2 and HSPF2 value from Table V-30 of the January 2017 CAC/HP ECS DFR. For three-phase equipment classes that did not having matching SEER and/or HSPF values in Table V-29 of the January 2017 CAC/HP ECS DFR, DOE evaluated the stringency of the ASHRAE 90.1-2019 SEER2 and HSPF2 levels relative to the Federal SEER and HSPF standards by qualitatively assessing how the testing method changes made for single phase switching from SEER/HSPF to SEER2/HSPF2 would impact three-phase equipment. *See id.* at 85 FR 60662-60663.

DOE received multiple comments in response to this preliminary crosswalk analysis in the September 2020 NODA/RFI. AHRI, Carrier, Goodman, and the Joint Advocates all commented in support of DOE's crosswalk methodology. (AHRI, No. 2 at p. 5; Carrier, No. 3 at p. 2; Goodman, No. 7 at p. 2; Joint Advocates, No. 6 at p. 2) Goodman commented further that all efficiency levels in ASHRAE 90.1-2019, effective January 1, 2023, are greater than or equal to the current Federal standards. (Goodman, No. 7 at p. 2) In response to comments received from stakeholders, DOE is evaluating its

preliminary crosswalk analysis and is proposing an additional crosswalk analysis for three-phase, less than 65,000 Btu/h VRF in this document.

B. Crosswalk Methodology

1. Three-phase, Less than 65,000 Btu/h, Single-package and Split-system ACUACs and ACUHPs

Because three-phase, less than 65,000 Btu/h single-package air conditioners and heat pumps have directly comparable single-phase product classes, DOE was able to utilize the same crosswalk as described in the January 2017 CAC/HP ECS DFR when evaluating the relative stringency of ASHRAE 90.1-2019 levels. *See* 82 FR 1786, 1848-1851 (Jan. 6, 2017). In the September 2020 NODA/RFI, DOE determined that the ASHRAE 90.1-2019 efficiency standards are equivalent to the translated Federal efficiency standards for single-package ACUACs and ACUHPs. 85 FR 60642, 60662-60663 (Sept. 25, 2020). However, for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs, DOE's preliminary crosswalk analysis determined that the levels in ASHRAE 90.1-2019 are more stringent than current Federal standards, which triggered DOE's review of the standard levels for three-phase, split-system equipment. *Id.*

In response to the proposed crosswalk in the September 2020 NODA/RFI, Goodman requested that DOE provide specific crosswalk values for the equipment classes where DOE determined that the post-2023 levels in ASHRAE 90.1-2019 are more stringent than the current Federal standards (*i.e.,* the two classes of three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs). (Goodman, No. 7 at p. 2) Specifically, Goodman requested that DOE provide specific crosswalked values for the translation from 13 SEER to SEER2 and from 8.2 HSPF to HSPF2. (*Id.*) Goodman

asserted that these values would be useful to help eliminate potential market confusion in the years 2023-2024, where some products on the market may be rated to SEER/HSPF (in compliance with current Federal standards) while other products would simultaneously be rated early to SEER2/HSPF2. (*Id.*)

As discussed, DOE conducted the crosswalk to evaluate the relative stringency of ASHRAE 90.1-2019 levels as compared to the existing Federal standards to ensure that backsliding would not result were the ASHRAE 90.1 levels adopted. Based on the crosswalk, DOE finds that it is unnecessary to provide specific crosswalk values for the two equipment classes of three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs for which ASHRAE 90.1-2019 increased stringency as compared to the current Federal standards.

2. Three-phase, Less than 65,000 Btu/h, Space-Constrained and Small-Duct, High-Velocity ACUACs and ACUHPs

In its preliminary crosswalk analysis in the September 2020 NODA/RFI, DOE determined that the post-2023 standards levels for S-C and SDHV equipment found in ASHRAE 90.1-2019 are less stringent than the current Federal standards for the following six equipment classes: (1) S-C, split-system ACUAC; (2) S-C, split-system ACUHP; (3) S-C, single-package ACUAC; (4) S-C, single-package ACUHP; (5) SDHV split-system ACUAC; and (6) SDHV split-system ACUHP. DOE's preliminary crosswalk showed that the crosswalked Federal standard levels for these equipment classes are qualitatively higher than the SEER2 and/or HSPF2 levels found in ASHRAE 90.1-2019, however DOE did not determine specific values for an appropriate crosswalk. In the September 2020 NODA/RFI, DOE noted that although the post-2023 values for S-C and SDHV equipment are less stringent than current Federal standards, it still intended

to consider these ASHRAE classes separately in this rulemaking as part of the six-year-lookback review. 85 FR 60642, 60663 (Sept. 25, 2020).

In response to the September 2020 NODA/RFI, AHRI commented that it disagreed with DOE's preliminary determination that it could not adopt the ASHRAE 90.1-2019 standard levels for S-C ACUACs and ACUHPs and SDHV ACUACs and ACUHPs that are aligned with their single-phase counterparts. AHRI contended that these products could not meet the general levels established for three-phase equipment and urged DOE to set levels for three-phase S-C and SDHV equipment at the levels prescribed by ASHRAE 90.1-2019, which are harmonized with the single-phase equivalents for those products. AHRI further stated that it is not aware of any three-phase S-C or SDHV products on the market and speculated that S-C products are unlikely to exist because the equipment class is limited to products having capacity less than 30,000 Btu/h. (AHRI, No. 2 at p. 5)

In a NOPR published on January 8, 2015, which covered energy conservation standards for commercial HVAC equipment, including three-phase, less than 65,000 Btu/h air conditioners and heat pumps ("January 2015 ASHRAE 90.1 NOPR"), DOE stated that EPCA does not separate these six additional equipment classes from other types of small commercial package air conditioning and heating equipment in its definitions, and, therefore, EPCA's definition of "small commercial package air conditioning and heating equipment" includes SDHV and S-C air conditioners and heat pumps. 80 FR 1172, 1184. DOE reiterated this position in the September 2020 NODA/RFI. 85 FR 60642, 60662 (Sept. 25, 2020). EPCA generally directs DOE to establish amended uniform national standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs at the minimum levels specified in ASHRAE Standard 90.1. (43

U.S.C. 6313(a)(6)(A)(ii)(I)) As DOE has previously stated, when considering the ASHRAE trigger, DOE evaluates ASHRAE amendments at the class level. Because the six equipment classes of three-phase S-C and SDHV equipment prescribed in ASHRAE 90.1-2019 are covered as small commercial package air conditioning and heating equipment, DOE cannot propose standard levels that are any lower than the current Federal standards. However, to distinguish S-C and SDHV equipment from the three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs equipment for which DOE was triggered by more stringent levels in ASHRAE 90.1-2019, DOE proposes to establish six separate equipment classes of three-phase S-C and SDHV equipment with separate standard levels. Consistent with EPCA, the levels that DOE is proposing for these S-C and SDHV equipment classes maintain equivalent stringency to the current applicable Federal standards, and are therefore more stringent than the corresponding levels set forth in ASHRAE 90.1-2019.

In this document, DOE proposes to extend its preliminary crosswalk analysis for these types of equipment (the September 2020 NODA/RFI presented a qualitative discussion of relative stringency) and propose specific efficiency levels in terms of SEER2 and HSPF2 that are crosswalked from the existing Federal standards for small commercial package air conditioning and heating equipment. DOE developed a crosswalk for S-C, split-system, and single-package ACUACs and ACUHPs and SDHV ACUACs and ACUHPs by applying similar translations as observed in the January 2017 CAC/HP ECS DFR for single-phase S-C and SDHV equipment to the existing Federal standards for small commercial package air conditioners and heat pumps.

a. Space-Constrained Equipment

Single-phase S-C air conditioners, which are not further separated into split-systems and single-package systems, have a DOE minimum SEER of 12 that was translated to 11.7 SEER2. 82 FR 1786, 1848-1849 (Jan. 6, 2017). Single-phase S-C heat pumps also have a minimum SEER of 12, but the January 2017 CAC/HP ECS DFR established a different translated SEER2 of 11.9. *Id.* This difference in the SEER2 requirement between S-C air conditioners and S-C heat pumps is due to differences in the requirements for determination of represented values codified at Table 1 to paragraph (a)(1) of 10 CFR 429.16. In a December 9, 2021, NOPR to amend the test procedure for three-phase ACUACs and ACUHPs with cooling capacity of less than 65,000 Btu/h and three-phase VRF with cooling capacity of less than 65,000 Btu/h ("December 2021 Three-Phase TP NOPR"), DOE proposed to align the representation requirements for three-phase, less than 65,000 Btu/h equipment with the representation requirements for single-phase CACs and HPs. 86 FR 70316, 70326-70327. Accordingly, DOE is proposing in this document to utilize the same cooling-metric translations for three-phase, space-constrained equipment as the translations present for single-phase, space-constrained equipment (*i.e.,* applying a 0.3 point SEER2 decrement for space-constrained air conditioners and a 0.1 point SEER2 decrement for space-constrained heat pumps). DOE notes that split-system S-C ACUACs are currently covered under the Federal standard of 13.0 SEER for three-phase, split-system, less than 65,000 Btu/h ACUACs, whereas S-C split-system ACUHPs and S-C single-packaged ACUACs and ACUHPs are each covered under corresponding DOE equipment classes with a standard of 14 SEER[5].

With regards to the translation from HSPF to HSPF2 for S-C ACUACs and ACUHPs, DOE is proposing to use the same 15 percent reduction from the January 2017

[5] *See* table in paragraph (c)(1) of 10 CFR 430.32 for current standards.

CAC/HP ECS DFR when translating from HSPF to HSPF2 at an equivalent stringency. Because the changes to the heating load line between AHRI 210/240-2008 and AHRI 210/240-2023 are equivalent to the changes in the heating load line between appendix M and appendix M1, DOE has tentatively concluded that utilizing the same HSPF2 translation from single-phase CACs and HPs is appropriate for S-C ACUACs and ACUHPs.

b. Small-Duct, High-Velocity Equipment

For single-phase SDHV CACs and HPs, there is no increase in external static pressure requirements in appendix M1 as compared to appendix M. Consequently, in the January 2017 CAC/HP ECS DFR, there was no decrease in numerical value when translating standards from SEER to SEER2. 82 FR 1786, 1848-1849 (Jan. 6, 2017). Given that the test procedures for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs are aligned with the test procedures for single-phase CACs and HPs, there are also no increases in external static pressure requirements for SDHV ACUACs and ACUHPs in AHRI 210/240-2023. Therefore, DOE is proposing no decrement when translating from SEER to SEER2 for SDHV ACUACs and ACUHPs.

For the heating mode for SDHV ACUHPs, DOE is proposing to use the same 15 percent reduction from the January 2017 CAC/HP ECS DFR when translating from HSPF to HSPF2. *Id.* at 82 FR 1850. Because the changes to the heating load line between AHRI 210/240-2008 and AHRI 210/240-2023 are equivalent to the changes in the heating load line between appendix M and appendix M1, DOE has tentatively concluded that utilizing the same HSPF2 translation from single-phase CACs and HPs is appropriate for SDHV ACUACs and ACUHPs.

3. Three-phase, Less than 65,000 Btu/h VRF

The current DOE test procedure for VRF multi-split systems (including three-phase, less than 65,000 Btu/h VRF) references AHRI 1230-2010 with addendum 1. For three-phase, less than 65,000 Btu/h VRF, AHRI 1230-2010 is used to calculate cooling and heating efficiency in terms of the SEER and HSPF metrics, respectively. In May 2021, AHRI published AHRI 1230-2021, which excludes from its scope three-phase, less than 65,000 Btu/h VRF. Accordingly, in the December 2021 Three-Phase TP NOPR, DOE proposed to remove its reference to AHRI 1230-2010 and instead to reference AHRI 210/240-2023 in the test procedure for three-phase, less than 65,000 Btu/h VRF. 86 FR 70316, 70321-70322 (Dec. 9, 2021). In that proposed rule, DOE noted that AHRI 210/240-2023 includes in its scope three-phase, less than 65,000 Btu/h VRF systems and harmonizes with the updated Federal test method for single-phase central air conditioners and central air conditioning heat pumps with rated cooling capacities of less than 65,000 Btu/h (*i.e.*, appendix M1, effective January 1, 2023), which includes single-phase, air-cooled, VRF systems with a cooling capacity of less than 65,000 Btu/h. *Id.* at 85 FR 70322. Like appendix M1, AHRI 210/240-2023 is used to calculate cooling and heating efficiency in terms of updated metrics, SEER2 and HSPF2, respectively. As discussed in section II.B.2, ASHRAE 90.1-2019 established SEER2 and HSPF2 levels for three-phase, less than 65,000 Btu/h CUACs and CUHPs (some with increased stringency over current DOE levels) but did not consider new metrics or an increase in stringency for three-phase, less than 65,000 Btu/h VRF. Accordingly, DOE is proposing in this document to update its efficiency metrics for three-phase, less than 65,000 Btu/h VRF from SEER and HSPF measured per AHRI 1230-2010 to SEER2 and HSPF2 measured per AHRI 210/240-2023.

To translate the existing SEER and HSPF levels to SEER2 and HSPF2 levels with equivalent stringency, DOE conducted a crosswalk analysis. As described in section III.B, there are several classes of three-phase, less than 65,000 Btu/h CUACs and CUHPs for which DOE was able to apply identical crosswalk methodologies as were used for corresponding product classes of single-phase residential CACs and HPs in the January 2017 CAC/HP ECS DFR. However, there are not separate product classes for single-phase, residential, multi-split CACs and HPs (the consumer products that correspond to three-phase, less than 65,000 Btu/h VRF). Therefore, DOE could not rely on existing analysis specific to multi-split systems from the January 2017 CAC/HP ECS DFR and instead conducted an analytical crosswalk by evaluating changes in the test procedure between AHRI 1230-2010 and AHRI 210/240-2023. Additionally, DOE is not aware of any models of three-phase, less than 65,000 Btu/h VRF currently on the market.

When deciding how to translate SEER to SEER2 for three-phase, less than 65,000 Btu/h VRF, DOE considered the external static pressure testing requirements in AHRI 1230-2010 and AHRI 210/240-2023. While DOE is not aware of the existence of any models of three-phase, less than 65,000 Btu/h VRF, the Department expects that, should they exist, the most common configuration would likely be non-ducted indoor units, similar to other categories of VRF systems (e.g., single-phase, residential, multi-split CACs and HPs). Because both AHRI 1230-2010 and AHRI 210/240-2023 require testing at zero external static pressure ("ESP") for non-ducted indoor units, there would be no change in the numerical value translating from SEER to SEER2 for systems comprising of non-ducted indoor units. For systems rated with ducted indoor units, AHRI 1230-2010 specifies ESP requirements that vary with indoor unit cooling capacity (varying between 0.1 to 0.2 in H_2O), while AHRI 210/240-2023 specifies ESP requirements of 0.1 in H_2O for low-static indoor units and 0.3 in H_2O for mid-static

indoor units. Therefore, the ESP requirements would only result in different ratings for certain combinations of ducted indoor units. For example, DOE expects a typical configuration would be low-static indoor units with per-indoor-unit cooling capacity less than 28,800 Btu/h (given an overall system capacity less than 65,000 Btu/h) – in which case both test procedures require testing at 0.1 in H_2O. Consequently, DOE has tentatively determined that for a significant majority of three-phase, less than 65,000 Btu/h VRF systems (should they exist in the future), there would be no change in the required external static pressure when testing to the updated industry test procedure AHRI 210/240-2023. Therefore, DOE is not proposing a change in the numerical value of SEER2 standards crosswalked from existing SEER standards.

With regards to the translation from HSPF to HSPF2 for three-phase, less than 65,000 Btu/h VRF, DOE is proposing to use the same 15 percent reduction from the January 2017 CAC/HP ECS DFR when translating from HSPF to HSPF2 at an equivalent stringency. Because the changes to the heating load line between AHRI 1230-2010 and AHRI 210/240-2023 are equivalent to the changes in the heating load line between appendix M and appendix M1, DOE has tentatively concluded that utilizing the same HSPF2 translation from single-phase CACs and HPs is appropriate for three-phase, less than 65,000 Btu/h VRF.

C. Crosswalk Results

DOE conducted the crosswalk discussed in section III.B of this document to translate the current Federal standards to the SEER2 and HSPF2 metrics and determine whether the levels specified in ASHRAE 90.1-2019 represent more, less, or equivalent stringency as compared to the current Federal standards. DOE's crosswalk results for

three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less than 65,000 Btu/h VRF are presented in Table III-1

Table III-1 Crosswalk Results for Air-cooled, Three-phase, Less than 65,000 Btu/h ACUAC, ACUHP, and VRF Equipment

ASHRAE 90.1-2019 Equipment Class	Current Federal Equipment Class	Federal Energy Conservation Standard(s)	Crosswalk of Current Federal Standard(s)	Energy Efficiency Levels in ASHRAE 90.1-2019	Comparison of ASHRAE 90.1-2019 to Crosswalk[1]
Air-cooled Air Conditioner, Three-Phase, Single-Package, <65,000 Btu/h	Air-cooled Air Conditioner, Three-Phase, Single-Package, <65,000 Btu/h	14.0 SEER	13.4 SEER2	14.0 SEER before 1/1/2023 13.4 SEER2 on and after 1/1/2023	Equivalent
Air-cooled Air Conditioner, Three-Phase, Split-System, <65,000 Btu/h	Air-cooled Air Conditioner, Three-Phase, Split-System, <65,000 Btu/h	13.0 SEER	<13.0 SEER2[2]	13.0 SEER before 1/1/2023 13.4 SEER2 on and after 1/1/2023	More Stringent
Air-cooled Heat Pump, Three-Phase, Single-Package, <65,000 Btu/h	Air-cooled Heat Pump, Three-Phase, Single-Package, <65,000 Btu/h	14.0 SEER 8.0 HSPF	13.4 SEER2 6.7 HSPF2	14.0 SEER/8.0 HSPF before 1/1/2023 13.4 SEER2/6.7 HSPF on and after 1/1/2023	Equivalent
Air-cooled Heat Pump, Three-Phase, Split-System, <65,000 Btu/h	Air-cooled Heat Pump, Three-Phase, Split-System, <65,000 Btu/h	14.0 SEER 8.2 HSPF	13.4 SEER2 <7.5 HSPF2[3]	14.0 SEER/8.2 HSPF before 1/1/2023 14.3 SEER2/7.5 HSPF2 on and after 1/1/2023	More Stringent
Space-Constrained, Air-cooled Air Conditioner, Three-Phase, Single-Package, ≤30,000 Btu/h	Air-cooled Air Conditioner, Three-Phase, Single-Package, <65,000 Btu/h	14.0 SEER	13.9 SEER2	12.0 SEER before 1/1/2023 11.7 SEER2 on and after 1/1/2023	Less Stringent[3]
Space-Constrained, Air-cooled Air Conditioner, Three-Phase, Split-System, ≤30,000 Btu/h	Air-cooled Air Conditioner, Three-Phase, Split-System, <65,000 Btu/h	13.0 SEER	12.7 SEER2	12.0 SEER before 1/1/2023 11.7 SEER2 on and after 1/1/2023	Less Stringent[3]
Space-Constrained, Air-Cooled Heat Pump, Three-Phase, Single-Package, ≤30,000 Btu/h	Air-cooled Heat Pump, Three-Phase, Single-Package, <65,000 Btu/h	14.0 SEER 8.0 HSPF	13.9 SEER2 6.7 HSPF2	12.0 SEER/7.4 HSPF before 1/1/2023 11.7 SEER2/6.3 HSPF2 on and after 1/1/2023	Less Stringent[3]
Space-Constrained, Air-cooled Heat Pump, Three-Phase, Split-System, ≤30,000 Btu/h	Air-cooled Heat Pump, three-phase, Split-System, <65,000 Btu/h	14.0 SEER 8.2 HSPF	13.9 SEER2 7.0 HSPF2	12.0 SEER/7.4 HSPF before 1/1/2023 11.7 SEER2/6.3 HSPF2 on and after 1/1/2023	Less Stringent[3]
Small Duct High Velocity, Air-cooled Air Conditioner, Three-Phase, Split-System, <65,000 Btu/h	Air-cooled Air Conditioner, Three-Phase, Split-System, <65,000 Btu/h	13.0 SEER	13.0 SEER2	12.0 SEER before 1/1/2023 12.0 SEER2 on and after 1/1/2023	Less Stringent[3]

Small Duct, High Velocity, Air-cooled Heat Pump, Three-Phase, Split-System, <65,000 Btu/h	Air-cooled Heat Pump, Three-Phase, Split-Package, <65,000 Btu/h	14.0 SEER 8.2 HSPF	14.0 SEER2 6.9 HSPF2	12.0 SEER/7.2 HSPF before 1/1/2023 12.0 SEER2/6.1 HSPF2 on and after 1/1/2023	Less Stringent[3]
VRF, Air-Cooled, Air Conditioner	Air-cooled VRF Multi-Split Air Conditioners, < 65,000 Btu/h	13.0 SEER	12.9 SEER2	13.0 SEER	Equivalent[4]
VRF, Air-Cooled, Heat Pump	Air-cooled VRF Multi-Split Heat Pumps, < 65,000 Btu/h	13.0 SEER 7.7 HSPF	12.9 SEER2 6.5 HSPF2	13.0 SEER 7.7 HSPF	Equivalent[4]

[1] Column indicates whether the ASHRAE 90.1-2019 levels, beginning on January 1, 2023, are less stringent, equivalent to, or more stringent than the crosswalked Federal standards.

[2] The Federal SEER standard is lower than the ASHRAE 90.1-2019 SEER2 level indicating that the crosswalked Federal SEER2 standard will also be lower than the ASHRAE 90.1-2019 SEER2 level.

[3] For S-C and SDHV equipment, the ASHRAE 90.1 levels are less stringent than the crosswalked Federal efficiency levels because these classes are split off from split-system and single-package, respectively.

[4] As discussed in section III.B.3, ASHRAE 90.1-2019 did not establish SEER2/HSPF2 levels for three-phase, less than 65,000 Btu/h VRF equipment. DOE's crosswalk values represent an equivalent-stringency translation.

Issue 1: DOE requests comment on the crosswalk methodology described in section III.B of this proposed rule and the crosswalk results in Table III-1 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF.

IV. Estimates of Potential Energy Savings

As required under 42 U.S.C. 6313(a)(6)(A)(i), for three-phase, less than 65,000 Btu/h CUAC equipment classes for which ASHRAE 90.1-2019 set more stringent levels than the current Federal standards, DOE performed an assessment to determine the energy-savings potential of amending Federal standard levels to reflect the efficiency levels specified in ASHRAE 90.1-2019. The two equipment classes analyzed in the September 2020 NODA/RFI were air-cooled, three-phase, split-system, less than 65,000 Btu/h air conditioners and air-cooled, three-phase, split-system, less than 65,000 Btu/h heat pumps. In the September 2020 NODA/RFI, DOE presented the methodology to

determine energy savings along with the findings of the energy savings potential for the two equipment classes and sought comment on the analysis. 85 FR 60642, 60666-60673 (Sep. 25, 2020).

In response to the September 2020 NODA/RFI, AHRI and Carrier supported DOE's approach to develop unit energy consumption, shipments, and the no-new standards efficiency distributions that were used to estimate the energy savings potential of air-cooled, three-phase, split-system air conditioners and heat pumps less than 65,000 Btu/h. (AHRI, No. 2, at pp. 5-6; Carrier, No. 3 at pp. 2-3) However, AHRI, Carrier, and Goodman all disagreed with DOE's approach to equipment lifetime. (AHRI, No. 2, at p. 6; Carrier, No. 3 at p. 3; Goodman, No. 7 at p. 2) AHRI stated that DOE should use the average lifetime of 18.4 years for central air conditioners and 15.2 years for heat pumps stated in the January 2016 Final Rule for small, large, and very large commercial package air conditioning and heating equipment. (AHRI, No. 2 at p. 6) Carrier stated that the lifetime is overestimated and suggested a range of 10 to 15 years (Carrier, No. 3 at p. 3) Goodman suggested using a lifetime that is lower than the single-phase lifetime, such as 15 years, because three-phase products are typically installed in commercial applications and thus operate more hours per year and at more extreme conditions, resulting in a shorter lifetime. (Goodman, No. 7 at p. 2)

In its analysis for this NOPR, DOE did not make any changes to the inputs into the energy savings analysis that was presented in the September 2020 NODA/RFI, including the average lifetimes of 19 years for air conditioners and 16.2 years for heat pumps. First, DOE notes that the average lifetimes cited by AHRI are from the September 30, 2014 NOPR and not the January 15, 2016 final rule. *See* 79 FR 58948, 58981 (Sept. 30, 2014). In the January 15, 2016 final rule, DOE updated the lifetimes

based on new shipment data. The average lifetimes for small commercial package air conditioning equipment used in the January 15, 2016 final rule was 21.1 years. 81 FR 2479, 2481 (January 15, 2016). As the commenters provided a range of lifetimes, DOE chose to maintain the average lifetimes used in the September 2020 NODA/RFI. DOE estimated the potential site, primary, and full-fuel-cycle (FFC) energy savings in quads (*i.e.*, 10^{15} Btu) for adopting ASHRAE 90.1-2019 for the two equipment classes analyzed. The potential energy savings of adopting ASHRAE 90.1-2019 levels are measured relative to the current Federal standards. Table IV-1 displays the energy savings at the ASHRAE level for air-cooled, three-phase, split-system air conditioners less than 65,000 Btu/h and air-cooled, three-phase, split-system heat pumps less than 65,000 Btu/h. The values in the table below are identical to the values presented in the September 2020 NODA/RFI. 85 FR 60642, 60673 (Sept. 25, 2020)

Table IV-1 Potential Energy Savings for Air-Cooled, Three-phase, Split-system, Less Than 65,000 Btu/h Air Conditioners and Heat Pumps

	Split-System, Air Conditioner		**Split System, Heat Pump**	
Site Energy Savings Estimate				
	ASHRAE Efficiency Level	**Quads**	**ASHRAE Efficiency Level**	**quads**
Level 0– ASHRAE	13.4 SEER2	0.0007	14.3 SEER2 7.5 HSPF2	0.0017
Primary Energy Savings Estimate				
Level 0– ASHRAE	13.4 SEER2	0.0017	14.3 SEER2 7.5 HSPF2	0.0044
FFC Energy Savings Estimate				
Level 0– ASHRAE	13.4 SEER2	0.0018	14.3 SEER2 7.5 HSPF2	0.0047

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific circumstances surrounding a given rulemaking. 86 FR 70892, 70901 (Dec. 13, 2021) For example, the United States rejoined the Paris Agreement on February 19, 2021. As

part of that agreement, the United States has committed to reducing GHG emissions in order to limit the rise in mean global temperature. As such, energy savings that reduce GHG emissions have taken on greater importance. Additionally, some covered products and equipment have most of their energy consumption occur during periods of peak energy demand. The impacts of these products on the energy infrastructure can be more pronounced than products with relatively constant demand. In evaluating the significance of energy savings, DOE considers differences in primary energy and FFC effects for different covered products and equipment when determining whether energy savings are significant. Primary energy and FFC effects include the energy consumed in electricity production (depending on load shape), in distribution and transmission, and in extracting, processing, and transporting primary fuels (*i.e.,* coal, natural gas, petroleum fuels), and thus present a more complete picture of the impacts of energy conservation standards.

DOE conducted an analysis of the emissions reductions at the ASHRAE efficiency level for air-cooled, three-phase, split-system, less than 65,000 Btu/h air conditioners and air-cooled, three-phase, split-system, less than 65,000 Btu/h heat pumps. This emissions analysis consists of two components. The first component estimates the effect of potential energy conservation standards on power sector combustion emissions of CO_2, NO_X, SO_2, and Hg. The second component estimates the impacts of potential standards on emissions of two additional greenhouse gases, CH_4 and N_2O, as well as the reductions to emissions of other gases due to "upstream" activities in the fuel production chain. These upstream activities comprise extraction, processing, and transporting fuels to the site of combustion. Table IV-2 displays the emissions reductions estimates for the power sector, the upstream sector, and the full-fuel-cycle.

Table IV-2 Potential Emissions Savings for Air-Cooled, Three-phase, Split-system, Less Than 65,000 Btu/h Air Conditioners and Heat Pumps

	Split System, Air Conditioner	Split System, Heat Pump
	ASHRAE Efficiency Level	ASHRAE Efficiency Level
Power Sector Emissions		
CO_2 (*million metric tons*)	0.1	0.2
CH_4 (*thousand tons*)	0.0	0.0
N_2O (*thousand tons*)	0.0	0.0
SO_2 (*thousand tons*)	0.0	0.1
NO_X (*thousand tons*)	0.0	0.1
Hg (*tons*)	0.0	0.0
Upstream Emissions		
CO_2 (*million metric tons*)	0.0	0.0
CH_4 (*thousand tons*)	0.5	1.2
N_2O (*thousand tons*)	0.0	0.0
SO_2 (*thousand tons*)	0.0	0.0
NO_X (*thousand tons*)	0.1	0.2
Hg (*tons*)	0.0	0.0
Total FFC Emissions		
CO_2 (*million metric tons*)	0.1	0.2
CH_4 (*thousand tons*)	0.5	1.2
N_2O (*thousand tons*)	0.0	0.0
SO_2 (*thousand tons*)	0.0	0.1
NO_X (*thousand tons*)	0.1	0.3
Hg (*tons*)	0.0	0.0

V. Conclusions

A. Consideration of More Stringent Efficiency Levels for Split Systems

As discussed, ASHRAE 90.1-2019 includes efficiency levels more stringent than the current Federal standards for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs. When triggered by an update to ASHRAE Standard 90.1, EPCA requires DOE to establish an amended uniform national standard for equipment classes at the minimum level specified in the amended ASHRAE Standard 90.1 unless DOE determines, by rule published in the *Federal Register*, and supported by clear and convincing evidence, that adoption of a uniform national standard more stringent than the amended ASHRAE Standard 90.1 for the equipment class would result in significant additional conservation of energy and is technologically feasible and economically

justified. (42 U.S.C. 6313(a)(6)(A)(ii)(I)-(II)). As noted previously, clear and convincing evidence is a heightened standard, and would only be met where the Secretary has an abiding conviction, based on available facts, data, and DOE's own analyses, that it is highly probable an amended standard would result in a significant additional amount of energy savings, and is technologically feasible and economically justified. *See American Public Gas Association v. U.S. Dep't of Energy*, No. 20-1068, 2022 WL 151923, at *4 (D.C. Cir. January 18, 2022) (citing *Colorado v. New Mexico*, 467 U.S. 310, 316, 104 S.Ct. 2433, 81 L.Ed.2d 247 (1984)).

In the September 2020 NODA/RFI, DOE did not consider more stringent efficiency levels, as this would require DOE to crosswalk the entire market for this equipment. 85 FR 60642, 60674 (Sept. 25, 2020) The amended levels in ASHRAE 90.1-2019 rely on updated metrics (SEER2 and HSPF2), which are not applicable until 2023. Furthermore, the single-phase market, which is nearly identical to three-phase equipment, will not begin to use SEER2 and HSPF2 until 2023. Single-phase and three-phase models generally are manufactured on the same production lines and are physically identical to their corresponding single-phase central air conditioner and central air conditioning heat pump models except the former have three-phase electrical systems and use components, primarily motors and compressors, that are designed for three-phase power input. 86 FR 70316, 70322 (Dec. 9, 2021). The amended levels for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs in ASHRAE 90.1-2019 are the same efficiency levels that will be required for single-phase air conditioners and heat pumps in 2023 (*See* 10 CFR 430.32(c)(5)). Given that the amended levels for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less than 65,000 Btu/h VRF, or those for single-phase air conditioners and heat pumps, will not be effective until January 1, 2023 at the earliest, manufacturers have not yet made representations using the

updated metrics. 85 FR 60642, 60674 (Sept. 25, 2020). As a result, there are currently no public databases with ratings in terms of the updated metrics.

EPCA states that in order for DOE to adopt a standard more stringent than an amended ASHRAE 90.1 standard, DOE must support its decision with clear and convincing evidence. In the September 2020 NODA/RFI, DOE tentatively determined that the lack of market data for the amended efficiency metric creates substantial doubt in any analysis of energy savings that would result from efficiency levels more stringent than those in ASHRAE 90.1-2019 given the 2023 compliance date. 85 FR 60642, 60674 (Sept. 25, 2020) Therefore, DOE did not conduct any analysis of energy savings from more stringent standards for the two triggered classes of three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs. DOE requested data and information that would enable it to determine whether more stringent standards would result in significant energy savings for the two triggered equipment classes in the September 2020 NODA/RFI. *Id.*.

In response to the September 2020 NODA/RFI, AHRI and Rheem commented in support of generally adopting the amended ASHRAE 90.1-2019 standard levels for all classes of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs as the national standards (AHRI, No. 2 at p. 1; Rheem, No. 4 at p. 1) However, AHRI stated that it did not have any data that it could provide to DOE to develop more stringent efficiency levels and supported harmonization with the ASHRAE 90.1-2019 levels. (AHRI, No. 2 at p. 6)

Similarly, Carrier commented that it had no data that would suggest that efficiency levels more stringent than ASHRAE 90.1-2019 would result in additional energy savings for classes where DOE is triggered. (Carrier, No. 3 at p. 3)

Conversely, Joint Advocates and CA IOUs encouraged DOE to evaluate more-stringent standards than the ASHRAE 90.1-2019 levels and said that they disagreed with DOE's preliminary conclusion in the September 2020 NODA/RFI that the test metric change created uncertainty that would prevent an adequate evaluation of more stringent standards. (Joint Advocates, No. 6 at pp. 2, 3-4; CA IOUs, No. 5 at p. 2) These commenters asserted that only when economic analyses are complete can the determination be made as to whether the statutory "clear and convincing evidence" requirement has been met. *Id.* Further, CA IOUs encouraged DOE to evaluate on a case-by-case basis whether the standard of "clear and convincing evidence" of energy savings has been met for increasing stringency of standards when there is a metric change. (CA IOUs, No 5 at 2) CA IOUs presented the concern that if DOE were to generalize the position taken in the September 2020 NODA/RFI to other product categories, some members of the ASHRAE 90.1 committee will be less likely to support updates to the test procedure if they believe that DOE will use the update as a reason to decline to conduct further analysis. (*Id.*)

CA IOUs requested that DOE complete an analysis using information from the Compliance and Certification Management System ("CCMS") database, noting that the maximum SEER rating in the database has increased since the previous final rule (*Id.* at pp. 2-3) CA IOUs also noted that DOE successfully used a crosswalk to compare SEER and SEER2 as well as HSPF and HSPF2 metrics for single-phase products in the January 2017 CAC/HP ECS DFR. (*Id.* at p. 3)

Likewise, the Joint Advocates stated that it is not unprecedented for DOE to adopt amended standards at levels higher than the ASHRAE Standard 90.1 levels based on a revised metric, referencing a prior standards rulemaking for ACUACs in which DOE adopted integrated energy efficiency ratio ("IEER") standards at levels that were more stringent than the corresponding ASHRAE 90.1 levels in a 2016 direct final rule (81 FR 2420 (Jan. 15, 2016)). (Joint Advocates, No. 6 at p. 4)

In response to the comments from Joint Advocates and CA IOUs, DOE notes that it makes determinations pursuant to the ASHRAE trigger (and the six-year look back review) by evaluating the information and data available specific to the equipment under review. In this NOPR, DOE is not making a general determination on whether the clear and convincing threshold can be met in instances in which there is a metric change. The preliminary position taken in the September 2020 NODA/RFI and in this NOPR on whether the clear and convincing evidence requirement for showing that more stringent standards would result in significant additional energy savings is specific to three-phase, less than 65,000 Btu/h ACUACs and ACUHPs. As suggested by CA IOUs, DOE makes this determination on a case-by-case basis. As to the concern that the preliminary determination put forward in this NOPR may cause some members of the ASHRAE Standard 90.1 committee to be less likely to support updates to industry test procedures, DOE notes that EPCA requires DOE to review periodically the test procedures for covered equipment and make amendments to the extent justified. (42 U.S.C. 6314(a)(1))

As discussed in the September 2020 NODA/RFI, an estimation of energy savings potentials of energy efficiency levels more stringent than the amended ASHRAE 90.1 levels would require developing efficiency data for the entire three-phase, less than 65,000 Btu/h ACUACs and ACUHPs market in terms of the SEER2 and HSPF2 metrics.

85 FR 60642, 60674 (Sept 25, 2020). Because there are minimal market efficiency data currently available in terms of SEER2 and HSPF2, this would require a crosswalk analysis much broader than the analysis used to evaluate ASHRAE 90.1-2019 levels. *Id.* The crosswalk analysis of ASHRAE 90.1-2019 levels presented in this NOPR required only that DOE translate the efficiency levels between the metrics at the baseline levels, and not that DOE translate all efficiency levels currently represented in the market (*i.e.*, high efficiency levels). To obtain SEER2 and HSPF2 market data for purposes of analysis of standard levels more stringent than ASHRAE 90.1-2019, DOE would be required to translate the individual SEER and HSPF ratings to SEER2 and HSPF2 ratings for all three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs models certified in DOE's CCMS Database. As noted in the September 2020 NODA/RFI, there is the added issue of the new metrics not being applicable until 2023, which compounds the problem of a lack of market data. *Id.* The change in metrics and the future compliance date create uncertainty in the development of more stringent efficiency levels as well as the market distribution by efficiency. *Id.*

Because of the lack of market data and the test metric change, DOE has tentatively determined that it lacks clear and convincing evidence that a more stringent standard level would result in significant additional conservation of energy and is technologically feasible and economically justified. Therefore, DOE has tentatively decided not to conduct further analysis for this particular rulemaking because DOE lacks the data necessary to assess potential energy conservation. Although DOE has not conducted an analysis of manufacturer impacts resulting from more stringent standards, DOE would expect that standards for three-phase equipment more stringent than the ASHRAE 90.1-2019 levels could impose burden to manufacturers by potentially

requiring them to develop and manufacture new models of three-phase equipment that are not otherwise identical to models of single-phase products for sale.

In this specific instance, DOE disagrees with comments from CA IOUs and Joint Advocates that the statutory clear and convincing evidence criterion can only be assessed after full economic analyses have been conducted. EPCA requires that DOE determine, supported by clear and convincing evidence, that adoption of a uniform national standard more stringent than the amended ASHRAE 90.1 for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs would result in significant additional conservation of energy *and* is technologically feasible *and* economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)(II); *emphasis added*) The inability to make a determination, supported by clear and convincing evidence, with regard to any one of the statutory criteria prohibits DOE from adopting more stringent standards regardless of determinations as to the other criteria. As a result, DOE has tentatively determined that at this time there is insufficient data specific to three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs (including but not limited to market efficiency data in terms of the new efficiency metric) to provide clear and convincing evidence of significant additional energy savings from three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs efficiency levels more stringent than ASHRAE 90.1-2019 levels.

The CA IOUs cited as precedent the crosswalk in the January 2017 CAC/HP ECS DFR, but that crosswalk was not analogous to the present NOPR for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs. Specifically, for single-phase CACs and HPs, DOE conducted its analysis in terms of the metrics at the time, SEER and HSPF. After selecting amended efficiency levels, DOE then crosswalked the selected levels to SEER2 and HSPF2 using a methodology consistent with the recommendations of the

CAC/HP Working Group. 82 FR 1786, 1849 (Jan. 6, 2017). DOE did not crosswalk the entire market for single-phase CACs and HPs – the crosswalk addressed only single-phase CAC and HPs with rated efficiency at the selected levels. Because ASHRAE 90.1-2019 included efficiency levels for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs based on SEER2 and HSPF2, DOE is unable to conduct an analysis based on SEER and HSPF metrics as it did for single-phase CACs and HPs.

Likewise, the past ACUAC rulemaking cited by the Joint Advocates as precedent was not analogous to the present situation for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs, because at the time that ACUAC rulemaking began, the IEER metric was already in use by the ACUAC industry. *See* 81 FR 2419, 2441 (Jan. 15, 2014).[6] Specifically, the vast majority of ACUAC models on the market were already rated for IEER (in addition to Energy Efficiency Ratio (EER), which was the federally regulated metric at the time), and these IEER market data for ACUACs were available in the AHRI Directory at the time.[7]

In contrast, during the development of this NOPR, there was no available SEER2 and HSPF2 market data. Specifically, the CCMS database and the AHRI directory do not currently rate any units with SEER2 or HSPF2 as the compliance date for these metrics is not until 2023.

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[6] DOE noted that AHRI Standard 340/360–2007 already included methods and procedures for testing and rating equipment with the IEER metric. ASHRAE, through its Standard 90.1, includes requirements based on the part-load performance metric, IEER. These IEER requirements were first established in Addenda to the 2008 Supplement to Standard 90.1– 2007, and were required for compliance with ASHRAE Standard 90.1 on January 1, 2010. 81 FR 2419, 2441 (Jan. 15, 2014).

[7] As part of a NODA/RFI for energy conservation standards for ACUACs published on February 1, 2013 (78 FR 7296), DOE made available a document that provides the methodology and results of an investigation of EER and IEER market data for ACUACs. *See* Docket No. EERE-2013-BT-STD-0007-0001.

After considering the stakeholder comments and the lack of sufficient SEER2 and HSPF2 market data available following the September 2020 NODA/RFI, DOE maintains its preliminary decision not to conduct additional analysis of more stringent standards for this rulemaking. The lack of market and performance data in terms of the new metric limits the analysis of energy savings that would result from efficiency levels more stringent than the amended ASHRAE 90.1-2019 levels for this equipment. Given the limits of any energy use analysis resulting from this lack of data, DOE has tentatively concluded that it lacks clear and convincing evidence that more stringent standards would result in a significant additional amount of energy savings as required for DOE to establish more-stringent standards.

As a result, DOE has tentatively determined that, due to the lack of market and performance data for the market as a whole in terms of SEER2 and HSPF2, it is unable to estimate potential energy savings from more stringent standards that meets the clear and convincing evidence threshold required by statute to justify standards more stringent than the amended ASHRAE 90.1 efficiency levels for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs.

B. Review Under Six Year Lookback

As discussed, DOE is required to conduct an evaluation of each class of covered equipment in ASHRAE Standard 90.1 every six years. (42 U.S.C. 6313(a)(6)(C)(i)) Accordingly, in this document, DOE is evaluating also the three-phase, less than 65,000 Btu/h equipment for which ASHRAE 90.1-2019 did not increase the stringency of the standards: (1) three-phase, single package, less than 65,000 Btu/h ACUACs and ACUHPs; (2) S-C, three-phase, less than 65,000 Btu/h ACUACs and ACUHPs; (3)

SDHV, three-phase, less than 65,000 Btu/h ACUACs and ACUHPs; and (4) three-phase, less than 65,000 Btu/h VRF.

As discussed in section III of this NOPR, DOE has tentatively concluded that there are no models on the market in the equipment classes of: (1) S-C, three-phase, less than 65,000 Btu/h ACUACs and ACUHPs; (2) SDHV, three-phase, less than 65,000 Btu/h ACUACs and ACUHPs; and (3) three-phase, less than 65,000 Btu/h VRF. Therefore, there would be no potential energy savings associated with more stringent standards for these classes, and DOE did not conduct further analyses of more stringent standards for these classes.

For three-phase, single package, less than 65,000 Btu/h ACUACs and ACUHPs, similar to the triggered classes discussed in section V.A of this document (i.e., three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs), there are limited SEER2 and HSPF2 data for models of varying efficiencies, and there is not a comparable industry analysis (i.e., translating ratings to the updated metric for these models on the market) for comparison. The market-wide analysis necessary to evaluate whether amended standards would result in significant energy savings and be technologically feasible and economically justified under the clear and convincing threshold would require more than baseline data.

Therefore, in line with the same initial reasoning presented in DOE's evaluation of more stringent standards for those classes of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs for which ASHRAE updated the industry standards (i.e., split systems), DOE tentatively determines that the "clear and convincing" threshold is not met for three-phase, single-package, less than 65,000 Btu/h ACUACs and ACUHPs. As

such, DOE did not conduct an energy savings analysis of standard levels more stringent than the current Federal standard levels for three-phase, single package, less than 65,000 Btu/h ACUACs and ACUHPs not triggered by ASHRAE 90.1-2019.

1. Proposed Addendum to ASHRAE 90.1-2019

On November 8, 2021, ASHRAE published the First Public Review Draft of Addendum 'ay' to ASHRAE 90.1-2019 ("the first public review draft"). The first public review draft proposes to update the efficiency metrics for three-phase, less than 65,000 Btu/h VRF to be in terms of SEER2 and HSPF2 starting January 1, 2023. The first public review draft also proposes to update the test procedure for three-phase, less than 65,000 Btu/h VRF to specify AHRI 1230-2014 with addendum 1 prior to Jan 1, 2023, and then AHRI 210/240-2023 starting Jan 1, 2023.

While the proposed Addendum ay to ASHRAE 90.1-2019 includes SEER2 and HSPF2 levels for three-phase, less than 65,000 Btu/h VRF, those levels are not yet formally incorporated into an approved version of ASHRAE 90.1. As a result, DOE is not triggered by the EPCA requirement to consider adopting amended standards at the new ASHRAE efficiency level. (42 U.S.C. 6313(a)(6)(A)(ii)) Because there are no models of three-phase, less than 65,000 Btu/h VRF currently on the market, DOE tentatively finds that there would be no potential energy savings associated with adopting the levels in the first public review draft, and thus no energy savings analysis would be required. Therefore, if ASHRAE finalizes a future version of ASHRAE 90.1 that (1) publishes prior to DOE publishing a final rule for amended energy conservation standards for three-phase, less than 65,000 Btu/h VRF and (2) includes SEER2/HSPF2 levels for three-phase, less than 65,000 Btu/h VRF that are more stringent than the existing federal standards, DOE proposes that it would adopt those levels in a final rule.

Issue 2: DOE requests comment on its proposal to adopt the more stringent SEER2/HSPF2 efficiency levels for three-phase, less than 65,000 Btu/h VRF in the first public review draft of Addendum 'ay' to ASHRAE 90.1-2019, should such levels be incorporated into an updated version of ASHRAE Standard 90.1 that publishes prior to DOE publishing a final rule for amended energy conservation standards for three-phase, less than 65,000 Btu/h VRF.

C. Definitions for Space-Constrained and Small-Duct, High-Velocity Equipment

ASHRAE 90.1-2019 includes S-C and SDHV equipment classes for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs. Because DOE is proposing to adopt separate standards for S-C, split-system, and single-package ACUACs and ACUHPs and SDHV ACUACs and ACUHPs, DOE is proposing the following definitions for "small-duct, high-velocity commercial package air conditioning and heating equipment" and "space-constrained commercial package and heating equipment" at 10 CFR 431.92. These two definitions align with the definitions specified in 10 CFR 430.2 for single-phase CACs and HPs, which, as discussed in section V.A, are identical to three-phase products except for the power input.

- *Small-duct, High-velocity Commercial Package Air Conditioning and Heating Equipment* means a basic model of commercial package, split-system air conditioning and heating equipment that: has a rated cooling capacity no greater than 65,000 Btu/h; is air-cooled; and is paired with an indoor unit that (1) includes an indoor blower housed with the coil; (2) is designed for, and produces, at least 1.2 inches of external static pressure when operated at the certified air volume rate of 220-350 CFM per rated ton cooling in the highest default cooling airflow-controls setting; and (3) when applied in the field, uses high velocity room outlets generally greater than 1,000 fpm that have less than 6.0 square inches of free area.

- *Space-constrained Commercial Package Air Conditioning and Heating Equipment* means a basic model of commercial package air conditioning and heating equipment (packaged or split) that: (1) is air-cooled; (2) has a rated cooling capacity no greater than 30,000 Btu/h; (3) has an outdoor or indoor unit having at least two overall exterior dimensions or an overall displacement that: (i) is substantially smaller than those of other units that are: (A) currently usually installed in site-built single-family homes; and (B) of a similar cooling, and, if a heat pump, heating capacity; and (ii) if increased, would certainly result in a considerable increase in the usual cost of installation or would certainly result in a significant loss in the utility of the product to the consumer; and (3) of a product type that was available for purchase in the United States as of December 1, 2000.

D. Proposed Energy Conservation Standards

1. Standard Levels

In this proposed rule, DOE is proposing amended energy conservation standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less than 65,000 Btu/h VRF. The proposed amended energy conservation standards are in terms of SEER2 and HSPF2, which would align with the efficiency metrics specified in ASHRAE 90.1-2019 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs[8] and with the updated industry test procedure AHRI 210/240-2023.

[8] While ASHRAE 90.1-2019 does not specify updated standards in terms of SEER2 and HSPF2 for three-phase, less than 65,000 Btu/h VRF, the proposed levels for three-phase, less than 65,000 Btu/h VRF are consistent with the updated industry test procedure for this equipment. Specifically, as discussed in section III.B.3 of this document, the updated industry test procedure applicable to three-phase, less than 65,000 Btu/h VRF is AHRI 210/240-2023, which measures performance in terms of the SEER2 and HSPF2 metrics. Further, as discussed in section V.B.1 of this document, industry has shown intent to adopt

DOE is proposing amended energy conservation standards in terms of SEER2 and HSPF2 that generally align with the standard levels in ASHRAE 90.1-2019 for three-phase equipment with some exceptions. For three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs, DOE is proposing standards that align with the more stringent levels in ASHRAE 90.1-2019. For three-phase, single-package, less than 65,000 Btu/h ACUACs and ACUHPs, DOE is proposing standards that align with the levels in ASHRAE 90.1-2019, which maintain equivalent stringency to the current Federal standards. For S-C split-system and single-package ACUACs and ACUHPs, SDHV ACUACs and ACUHPs, and for three-phase, less than 65,000 Btu/h VRF, DOE is proposing standards that differ from the values specified in ASHRAE 90.1-2019. These standards are equivalent stringency to the current Federal standards but are translated to the new metrics SEER2 and HSPF2. The proposed standards are presented in Table I.1 and Table I.2 of this document.

2. Compliance Date

In the September 2020 NODA/RFI, DOE discussed the potential compliance dates for amended standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs. 85 FR 60642, 60671 (Sept. 25, 2020). In that September 2020 NODA/RFI , DOE determined that for the two equipment classes where DOE was triggered by an increase in stringency in ASHRAE 90.1-2019 (three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs) the earliest compliance date for amended Federal standards would be two years after the ASHRAE 90.1-2019 compliance date (January 1, 2023), resulting in a compliance date of January 1, 2025. *Id.* DOE also discussed that EPCA specifies similar considerations on compliance date if DOE were to adopt

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efficiency levels in terms of SEER2 and HSPF2 for this equipment in ASHRAE Standard 90.1 in the first public review draft of Addendum ay to ASHRAE 90.1-2019.

amended standards more stringent than the ASHRAE 90.1 levels[9] for the two equipment classes for which DOE is evaluating standards under its 6-year lookback authority (three-phase, single-package, less than 65,000 Btu/h ACUACs and ACUHPs). *Id.* Ultimately, DOE determined that it did not have clear and convincing evidence to justify adopting standards more stringent than the ASHRAE 90.1-2019 levels, and, therefore, the three-year and/or six-year delay period would not apply. DOE presented an approximate compliance date of January 1, 2025 for all four equipment classes of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs. *Id.*

In response to the September 2020 NODA/RFI, Rheem agreed that the compliance date for amended Federal standards should be January 1, 2025 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs, based on the statutory provision by EPCA for a six-year lookback to amend uniform national standards. (Rheem, No.4 at p. 1) Carrier, Goodman, and Trane requested that DOE align the compliance date of amended standards in terms of SEER2 and HSPF2 for three-phase equipment with the corresponding compliance date for single-phase products of January 1, 2023, arguing that discrepancy in compliance dates between single-phase products and three-phase equipment would be undesirable and confusing for consumers and manufacturers. (Carrier, No. 3 at p. 2; Goodman, No. 7 at p. 2; Trane, No. 8 at p. 2)

In response to the comments from Carrier, Goodman, and Trane, DOE notes that while there may be benefits to aligning the compliance dates for SEER2 and HSPF2 standards between single-phase products and three-phase equipment, DOE cannot prescribe a compliance date for amended standards that would violate its obligations

[9] EPCA states that any such standard shall apply to equipment manufactured after a date that is the latter of the date three years after publication of the final rule establishing such standard or six years after the effective date for the current standard (42 U.S.C. 6313(a)(6)(C)(iv)

under EPCA. As discussed, EPCA requires that DOE specify a compliance date no earlier than 2 years after the compliance date specified in ASHRAE Standard 90.1 for triggered classes of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs. As a result, to provide a consistent compliance date for standards in terms of SEER2 and HSPF2 for all three-phase, less than 65,000 Btu/h equipment, DOE proposes that the amended standards proposed in this NOPR would apply for all three-phase, less than 65,000 Btu/h equipment that is manufactured on or after January 1, 2025.

VI. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866 and 13563

Executive Order ("E.O.") 12866, "Regulatory Planning and Review," as supplemented and reaffirmed by E.O. 13563, "Improving Regulation and Regulatory Review, 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE

emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of Information and Regulatory Affairs ("OIRA") in the Office of Management and Budget ("OMB") has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, this proposed regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit "significant regulatory actions" to OIRA for review. OIRA has determined that this proposed regulatory action does not constitute a "significant regulatory action" under section 3(f) of E.O. 12866. Accordingly, this action was not submitted to OIRA for review under E.O. 12866.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq*.) requires preparation of an initial regulatory flexibility analysis ("IRFA") for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website: *www.energy.gov/gc/office-general-counsel*. DOE reviewed this proposed rule under the

provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003.

The following sections detail DOE's IRFA for this energy conservation standards proposed rulemaking.

1. Description of Reasons Why Action Is Being Considered

DOE is proposing to amend the existing DOE energy conservation standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF. EPCA requires DOE to consider amending the existing Federal energy conservation standard for certain types of listed commercial and industrial equipment (generally, commercial water heaters, commercial packaged boilers, commercial air conditioning and heating equipment, and packaged terminal air conditioners and heat pumps) each time ASHRAE Standard 90.1 is amended with respect to such equipment. (42 U.S.C. 6313(a)(6)(A)) For each type of equipment, EPCA directs that if ASHRAE Standard 90.1 is amended, DOE must adopt amended energy conservation standards at the new efficiency level in ASHRAE Standard 90.1, unless clear and convincing evidence supports a determination that adoption of a more stringent efficiency level as a national standard would produce significant additional energy savings and be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)) This is referred to as "the ASHRAE trigger." DOE must also review and determine whether to amend standards of each class of covered equipment in ASHRAE Standard 90.1 every 6 years. (42 U.S.C. 6313(a)(6)(C)(i)).

2. Objectives of, and Legal Basis for, Rule

EPCA requires DOE to consider amending the existing Federal energy conservation standard each time ASHRAE Standard 90.1 is amended with respect to such equipment. (42 U.S.C. 6313(a)(6)(A)) ASHRAE officially released ASHRAE 90.1-2019 on October 25, 2019, thereby triggering DOE's previously referenced obligations to determine, for certain classes of three-phase, less than 65,000 Btu/h ACUAC, ACUHP, and VRF systems, whether: (1) the amended industry standard levels should be adopted; or (2) clear and convincing evidence exists to justify more-stringent standard levels. For any class where DOE was not triggered, the Department routinely considers those classes under EPCA's 6-year-lookback provision at the same time, to address the subject equipment in a comprehensive fashion.

3. Description on Estimated Number of Small Entities Regulated

For manufacturers of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF, the Small Business Administration ("SBA") has set a size threshold. DOE used the SBA's small business size standards to determine whether any small entities would be subject to the requirements of the proposed rule. *See* 13 CFR part 121. The equipment covered by this proposed rule is classified under North American Industry Classification System ("NAICS") code 333415[10], "Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing." In 13 CFR 121.201, the SBA sets a threshold of 1,250 employees or fewer for an entity to be considered as a small business for this category.

[10] The size standards are listed by NAICS code and industry description and are available at: *www.sba.gov/document/support--table-size-standards* (Last accessed on February 24, 2022).

DOE reviewed the energy conservation standards proposed in this NOPR under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. DOE relied on the Compliance Certification Database[11] in identifying manufacturers. For three-phase, less than 65,000 Btu/h ACUACs and ACUHPs, DOE identified 17 original equipment manufacturers ("OEM"). Of those 17 OEMs, DOE screened out companies that do not meet the definition of a "small business" or are foreign-owned and operated. DOE used subscription-based business information tools to determine headcount and revenue of the small businesses. DOE identified 4 small, domestic OEMs for consideration. DOE did not identify any manufacturers of three-phase, less than 65,000 Btu/h VRF.

Issue 3: DOE seeks comment on the number of small manufacturers producing three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF.

4. Description and Estimate of Compliance Requirements Including Differences in Cost, if Any, for Different Groups of Small Entities

In this NOPR, DOE proposes to:

- Adopt amended energy conservations standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs corresponding to the minimum efficiency levels in ASHRAE 90.1-2019. The levels are in terms of new metrics seasonal energy efficiency ratio-2 (SEER2) and heating seasonal performance factor-2 (HSPF2);

[11] DOE's Compliance Certification Database is available at: *www.regulations.doe.gov/ccms*

- Separate energy conservation standards for three-phase, less than 65,000 Btu/h ACUAC and ACUHP further into: (1) three-phase, S-C, commercial split-system air conditioners ("S-C ACUACs"); (2) three-phase, S-C , commercial split-system heat pumps ("S-C ACUHPs"); (3) S-C single-package ACUACs; (4) S-C single-package ACUHPs; (5) three-phase, SDHV commercial air conditioners ("SDHV ACUACs"); and (6) three-phase, SDHV commercial heat pumps ("SDHV ACUHPs"). These additional equipment classes are included in ASHRAE 90.1-2019 for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs; and

- Adopt amended energy conservation standards for three-phase, less than 65,000 Btu/h VRF. Because the levels for this equipment were not updated in ASHRAE 90.1-2019, the proposed standards are translated from the existing Federal regulatory metrics (SEER and HSPF) to the updated metrics (SEER2 and HSPF2) – as measured per the updated industry test procedure AHRI 210/240-2023.

For S-C ACUACs and ACUHPs and SDHV ACUACs and ACUHPs, the current applicable Federal standards are more stringent than the ASHRAE 90.1-2019 levels. To avoid backsliding (as required by EPCA), DOE cannot adopt the ASHRAE 90.1-2019 levels for these classes and is therefore proposing standards for S-C ACUACs and ACUHPs and SDHV ACUACs and ACUHPs equipment in terms of SEER2 and HSPF2 that maintain equivalent stringency to the applicable current Federal standards (in terms of SEER and HSPF). Of note, DOE has tentatively concluded that there are no models of S-C ACUACs and ACUHPs and SDHV ACUACs and ACUHPs on the market.

For three-phase, single-package, less than 65,000 Btu/h ACUACs and ACUHPs as well as three-phase, less than 65,000 Btu/h VRF, the ASHRAE 90.1-2019 levels are of equivalent stringency to the current Federal standards. Therefore, DOE's proposal to adopt standards in terms of the new metrics SEER2 and HSPF2 that are crosswalked from the current Federal standards would not increase the stringency of standards.

ASHRAE 90.1-2019 includes minimum efficiency levels for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs that are more stringent than the current Federal standards. DOE must adopt amended standards at the amended ASHRAE efficiency levels unless DOE determines, supported by clear and convincing evidence, that adoption of a more stringent standard would produce significant additional conservation of energy and would be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii). Because DOE proposes no such determination, this NOPR proposes to adopt amended standards at the amended ASHRAE efficiency levels for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs.

In estimating the impact to small manufacturers, DOE recognizes that manufacturers may incur conversion costs as a result of the proposed standards for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs. In reviewing all commercially available models of three-phase, split-system. less than 65,000 Btu/h ACUACs and ACUHPs in DOE's Compliance Certification Database, the 4 small manufacturers account for 30 percent of model offerings. For each of the 4 small manufacturers, approximately 58 percent of the companies' current models would meet the proposed levels. For the current models that do not meet the proposed levels, the small manufacturers would need to either discontinue or redesign non-compliant models. However, adoption of standards at least as stringent as the ASHRAE levels is required

under EPCA; furthermore, adopting standards above ASHRAE levels (DOE's only other option under 42 U.S.C. 6313(a)(6)(A)(ii)) would lead to an even greater portion of small manufacturer models requiring redesign. Therefore, DOE has tentatively determined that the proposed efficiency level provides the least cost option for small manufacturers.

Issue 4: DOE requests comment on its understanding of the current market accounted for by small manufacturers. DOE also requests comment on its understanding of the efficiency of the equipment offered by such manufacturers.

5. Duplication, Overlap, and Conflict with Other Rules and Regulations

DOE is not aware of any rules or regulations that duplicate, overlap, or conflict with this rule.

6. Significant Alternatives to the Rule

As EPCA requires DOE to either adopt the ASHRAE levels or to propose higher standards, DOE is limited in options to mitigate impacts to small businesses from the more stringent ASHRAE Standard 90.1 levels. DOE's proposal to adopt the more stringent levels in ASHRAE 90.1-2019 for three-phase, split-system, less than 65,000 Btu/h ACUACs and ACUHPs is the least cost option to industry.

Manufacturers subject to DOE's energy efficiency standards may apply to DOE's Office of Hearings and Appeals for exception relief under certain circumstances. Manufacturers should refer to 10 CFR part 1003 for additional details.

C. Review Under the Paperwork Reduction Act

Manufacturers of three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedures, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and for three-phase, less than 65,000 Btu/h VRF. 76 FR 12422 (Mar. 7, 2011); 80 FR 5099 (Jan. 30, 2015). The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act ("PRA"). This requirement has been approved by OMB under OMB control number 1910-1400. Public reporting burden for the certification is estimated to average 35 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

DOE is analyzing this proposed regulation in accordance with the National Environmental Policy Act of 1969 ("NEPA") and DOE's NEPA implementing regulations (10 CFR part 1021). DOE's regulations include a categorical exclusion for

rulemakings that establish energy conservation standards for consumer products or industrial equipment. 10 CFR part 1021, subpart D, appendix B5.1. DOE anticipates that this rulemaking qualifies for categorical exclusion B5.1(b) because it is a proposed rulemaking that establishes energy conservation standards for consumer products or industrial equipment, none of the exceptions identified in categorical exclusion B5.1(b) apply, no extraordinary circumstances exist that require further environmental analysis, and it otherwise meets the requirements for application of a categorical exclusion. *See* 10 CFR 1021.410. DOE will complete its NEPA review before issuing the final rule.

E. Review Under Executive Order 13132

E.O. 13132, "Federalism," 64 FR 43255 (Aug. 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The Executive order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this proposed rule and has tentatively determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the equipment that are the subject of this proposed rule. States can petition DOE for exemption from such preemption to the

extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6316(a) and (b); 42 U.S.C. 6297) Therefore, no further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O. 12988, "Civil Justice Reform," imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity, (2) write regulations to minimize litigation, (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 12988 specifically requires that executive agencies make every reasonable effort to ensure that the regulation: (1) clearly specifies the preemptive effect, if any, (2) clearly specifies any effect on existing Federal law or regulation, (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction, (4) specifies the retroactive effect, if any, (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this proposed rule meets the relevant standards of E.O. 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 ("UMRA") requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and

Tribal governments and the private sector. Pub. L. 104-4, section 201 (codified at 2 U.S.C. 1531). For a proposed regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of $100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed "significant intergovernmental mandate," and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE's policy statement is also available at *www.energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf*.

This proposed rule does not contain a Federal intergovernmental mandate, nor is it expected to require expenditures of $100 million or more in any one year by the private sector. As a result, the analytical requirements of UMRA do not apply.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105-277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This proposed rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

Pursuant to E.O. 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights," 53 FR 8859 (Mar. 15, 1988), DOE has determined that this proposed rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M-19-15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines which are available at *www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf*. DOE has reviewed this NOPR under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

E.O. 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any proposed significant energy action. A "significant energy action" is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that (1)

is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

DOE has tentatively concluded that this proposed rule, which proposes amended energy conservation standards for three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF, is not a significant energy action because the proposed standards are not likely to have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as such by the Administrator at OIRA. Accordingly, DOE has not prepared a Statement of Energy Effects on this proposed rule.

L. Information Quality

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy ("OSTP"), issued its Final Information Quality Bulletin for Peer Review ("the Bulletin"). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the bulletin is to enhance the quality and credibility of the Government's scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are "influential scientific information," which the Bulletin defines as "scientific information the agency reasonably

can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions." 70 FR 2664, 2667.

In response to OMB's Bulletin, DOE conducted formal peer reviews of the energy conservation standards development process and the analyses that are typically used and has prepared a report describing that peer review.[12] Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. Because available data, models, and technological understanding have changed since 2007, DOE has engaged with the National Academy of Sciences to review DOE's analytical methodologies to ascertain whether modifications are needed to improve the Department's analyses. DOE is in the process of evaluating the resulting report.[13]

VII. Public Participation

A. Participation in the Webinar

The time and date for the webinar meeting are listed in the **DATES** section at the beginning of this document. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's website: *www.energy.gov/eere/buildings/public-meetings-and-comment-*

[12] The 2007 "Energy Conservation Standards Rulemaking Peer Review Report" is available at: *www.energy.gov/eere/buildings/downloads/energy-conservation-standards-rulemaking-peer-review-report-0* (last accessed December 10, 2021).

[13] The report is available at *www.nationalacademies.org/our-work/review-of-methods-for-setting-building-and-equipment-performance-standards*

deadlines Participants are responsible for ensuring their systems are compatible with the webinar software.

B. Procedure for Submitting Prepared General Statements for Distribution

Any person who has an interest in the topics addressed in this document, or who is representative of a group or class of persons that has an interest in these issues, may request an opportunity to make an oral presentation at the webinar. Such persons may submit to *ApplianceStandardsQuestions@ee.doe.gov*. Persons who wish to speak should include with their request a computer file in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

Persons requesting to speak should briefly describe the nature of their interest in this rulemaking and provide a telephone number for contact. DOE requests persons selected to make an oral presentation to submit an advance copy of their statements at least two weeks before the webinar. At its discretion, DOE may permit persons who cannot supply an advance copy of their statement to participate, if those persons have made advance alternative arrangements with the Building Technologies Office. As necessary, requests to give an oral presentation should ask for such alternative arrangements.

C. Conduct of the Webinar

DOE will designate a DOE official to preside at the webinar and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336

of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar/public meeting. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar/public meeting and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will present a summary of the proposals, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning other matters relevant to this proposed rulemaking. The official conducting the webinar will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar.

A transcript of the webinar will be included in the docket, which can be viewed as described in the Docket section at the beginning of this document. In addition, any person may buy a copy of the transcript from the transcribing reporter.

D. Submission of Comments

DOE will accept comments, data, and information regarding this proposed rule before or after the public meeting, but no later than the date provided in the **DATES** section at the beginning of this proposed rule. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

Submitting comments via *www.regulations.gov*. The *www.regulations.gov* webpage will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information ("CBI")). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email. Comments and documents submitted via email also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. No telefacsimiles ("faxes") will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of

any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit via email two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

E. Issues on Which DOE Seeks Comment

Although DOE welcomes comments on any aspect of this proposal, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

Issue 1: DOE requests comment on the crosswalk methodology described in section III.B of this document and the crosswalk results in Table III-1 for three-phase,

less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF.

Issue 2: DOE requests comment on its proposal to adopt the more stringent SEER2/HSPF2 efficiency levels for three-phase, less than 65,000 Btu/h VRF in the first public review draft of Addendum 'ay' to ASHRAE 90.1-2019, should such levels be incorporated into an updated version of ASHRAE Standard 90.1 that publishes prior to DOE publishing a final rule for amended energy conservation standards for three-phase, less than 65,000 Btu/h VRF.

Issue 3: DOE seeks comment on the number of small manufacturers producing three-phase, less than 65,000 Btu/h ACUACs and ACUHPs and three-phase, less than 65,000 Btu/h VRF.

Issue 4: DOE requests comment on its understanding of the current market accounted for by small manufacturers. DOE also requests comment on its understanding of the efficiency of the equipment offered by such manufacturers.

Additionally, DOE welcomes comments on other issues relevant to the conduct of this proposed rulemaking that may not specifically be identified in this document.

VIII. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of proposed rulemaking and request for comment.

List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Confidential business information, Energy conservation test procedures, and Reporting and recordkeeping requirements.

Signing Authority

This document of the Department of Energy was signed on March 23, 2022, by Kelly J. Speakes-Backman, Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on March 23, 2022.

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Treena V. Garrett
Federal Register Liaison Officer,
U.S. Department of Energy

For the reasons set forth in the preamble, DOE proposes to amend part 431 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, as set forth below:

PART 431 – ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

1. The authority citation for part 431 continues to read as follows:

Authority: 42 U.S.C 6291-6317; 28 U.S.C 2461 note.

2. Section 431.92 is amended by adding, in alphabetical order, definitions for "Small-duct, High-velocity Commercial Package Air Conditioning and Heating Equipment" and "Space-constrained Commercial Package Air Conditioning and Heating Equipment" to read as follows:

§431.92 Definitions concerning commercial air conditioners and heat pumps.

* * * * *

Small-duct, High-velocity Commercial Package Air Conditioning and Heating Equipment means a basic model of commercial package, split-system air conditioning and heating equipment that:

(1) Has a rated cooling capacity no greater than 65,000 Btu/h;

(2) Is air-cooled; and

(3) Is paired with an indoor unit that

(i) Includes an indoor blower housed with the coil;

(ii) Is designed for, and produces, at least 1.2 inches of external static pressure when operated at the certified air volume rate of 220-350 CFM per rated ton cooling in the highest default cooling airflow-controls setting; and

(iii) When applied in the field, uses high velocity room outlets generally greater than 1,000 fpm that have less than 6.0 square inches of free area.

Space-constrained Commercial Package Air Conditioning and Heating Equipment means a basic model of commercial package air conditioning and heating equipment (packaged or split) that:

(1) Is air-cooled;

(2) Has a rated cooling capacity no greater than 30,000 Btu/h;

(3) Has an outdoor or indoor unit having at least two overall exterior dimensions or an overall displacement that:

(i) Is substantially smaller than those of other units that are:

(A) Currently usually installed in site-built single-family homes; and

(B) Of a similar cooling, and, if a heat pump, heating capacity; and

(ii) If increased, would certainly result in a considerable increase in the usual cost of installation or would certainly result in a significant loss in the utility of the product to the consumer;

and

(4) Of a product type that was available for purchase in the United States as of December 1, 2000.

* * * * *

3. Section 431.97 is amended by:

a. Removing the rows of Table 1 to paragraph (b), under the column heading, “Equipment Type” for: “Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System)” and “Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package)”;

b. Removing each instance in Table 1 to paragraph (b), “[2]” and “[3]” and adding in their place “[1]” and “[2]”;

c. Removing footnote 1 in Table 1 to paragraph (b) and redesignating footnotes “2” and “3” as footnotes “1” and “2”, respectively;

d. Removing “June 16, 2008.” and adding in its place “June 16, 2008.[2]”, in row 13, “Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System)”, in Table 3 to paragraph (b) under the column heading, “Compliance date: Equipment manufactured starting on …”;

e. Removing “January 1, 2017.” and adding in its place “January 1, 2017.[2]”, in row 14, “Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System)”, in Table 3 to paragraph (b) under the column heading, “Compliance date: Equipment manufactured starting on …”;

f. Removing “January 1, 2017.” and adding in its place “January 1, 2017.[2]”, in row 15, “Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package)”, in Table 3 to paragraph (b) under the column heading, “Compliance date: Equipment manufactured starting on …”;

g. Removing "January 1, 2017." and adding in its place "January 1, 2017.2", in row 16, "Small Commercial Package Air-Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single-Package)", in Table 3 to paragraph (b) under the column heading, "Compliance date: Equipment manufactured starting on …";

h. Adding, immediately following footnote 1 below Table 3 to paragraph (b), "[2] And manufactured before January 1, 2025. For equipment manufactured on or after January 1, 2025, see Table 14 to paragraph (g) of this section for updated efficiency standards.";

i. Removing "January 1, 2017." and adding in its place "January 1, 2017.3", in row 1, "Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Split-System)", in Table 4 to paragraph (b) under the column heading, "Compliance date: Equipment manufactured starting on…";

j. Removing the words "January 1, 2017." and adding in its place "January 1, 2017.[3]", in row 2, "Small Commercial Package Air Conditioning and Heating Equipment (Air-Cooled, 3-Phase, Single Package)", in Table 4 to paragraph (b) under the column heading, "Compliance date: Equipment manufactured starting on…";

k. Adding, immediately following footnote 2 below Table 4 to paragraph (b), "[3] And manufactured before January 1, 2025. For equipment manufactured on or after January 1, 2025, see Table 14 to paragraph (g) of this section for updated efficiency standards.";

l. Removing "June 16, 2008." and adding in its place "June 16, 2008.[2]", in rows 1, VRF Multi-Split Air Conditioners (Air-Cooled)", and 7, "VRF Multi-Split Heat Pumps (Air-Cooled)", of Table 13 to paragraph (f) under

the column heading: “Compliance date: Products manufactured on and after…”;

m. Adding, immediately following footnote 1 below Table 13 to paragraph (f), “[2] And manufactured before January 1, 2025. For equipment manufactured on or after January 1, 2025, see Table 14 to paragraph (g) of this section for updated efficiency standards.”; and

n. Adding a new paragraph (g) and Table 14 to read as follows:

§431.97 Energy efficiency standards and their compliance dates.

* * * * *

(g) Each air-cooled, three-phase, small commercial package air conditioning and heating equipment with a cooling capacity of less than 65,000 Btu/h and air-cooled, three-phase variable refrigerant flow multi-split air conditioning and heating equipment with a cooling capacity of less than 65,000 Btu/h manufactured on or after January 1, 2025, or if certifying to SEER2/HSPF2, must meet the applicable minimum energy efficiency standard level(s) set forth in Table 14 of this section.

TABLE 14 TO §431.97—UPDATED MINIMUM EFFICIENCY STANDARDS FOR AIR-COOLED, THREE-PHASE, SMALL COMMERCIAL PACKAGE AIR CONDITIONING AND HEATING EQUIPMENT WITH A COOLING CAPACITY OF LESS THAN 65,000 BTU/H AND AIR-COOLED, THREE-PHASE, SMALL VARIABLE REFRIGERANT FLOW MULTI-SPLIT AIR CONDITIONING AND HEATING EQUIPMENT WITH A COOLING CAPACITY OF LESS THAN 65,000 BTU/H

Equipment Type	Size Category (Cooling)	Subcategory	Minimum Efficiency
Air Conditioners	< 65,000 Btu/h	Split-System	13.4 SEER2
		Single-Package	13.4 SEER2
Heat Pumps	< 65,000 Btu/h	Split-System	14.3 SEER2 7.5 HSPF2
		Single-Package	13.4 SEER2 6.7 HSPF2
Space-Constrained Air Conditioners	≤ 30,000 Btu/h	Split-System	12.7 SEER2
		Single-Package	13.9 SEER2
Space-Constrained Heat Pumps	≤ 30,000 Btu/h	Split-System	13.9 SEER2 7.0 HSPF2
		Single-Package	13.9 SEER2 6.7 HSPF2
Small-Duct, High-Velocity Air Conditioners	< 65,000 Btu/h	Split-System	13.0 SEER2
Small-Duct, High-Velocity Heat Pumps	< 65,000 Btu/h	Split-System	14.0 SEER2 6.9 HSPF2
VRF Air Conditioners	< 65,000 Btu/h	-	13.0 SEER2
VRF Heat Pumps	< 65,000 Btu/h	-	13.0 SEER2 6.5 HSPF2

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